PROOF OF THE CONTINUED FRACTION CONJECTURE FOR $(a,b)=(z,z^6+z^3+z+1)$

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Abstract. The continued fraction conjecture claims that the continued fraction defined by the (a,b)-Thue-Morse sequence is algebraic over $\mathbb{F}_2(x)$ for all pairs of distinct elements (a,b) in $\mathbb{F}_2[x]\setminus\mathbb{F}_2$. In this paper we prove the conjecture for $(a,b)=(z,z^6+z^3+z+1)$.

1. Introduction

Let $\mathbb{F}_2$ be the finite field of cardinality 2. Given a sequence of polynomials $\mathbf{a}=(a_0(z),a_1(z),a_2(z),\ldots)$ of elements from $\mathbb{F}_2[z]\setminus\mathbb{F}_2$, we define the infinite continued fraction

$$\mathrm{CF}(\mathbf{a}(z))=\cfrac{1}{a_0(z)+\cfrac{1}{a_1(z)+\cfrac{1}{a_2(z)+\cfrac{1}{\ddots}}}} \tag{1.1}$$

as the limit of the finite continued fractions

$$\mathrm{CF}_n(\mathbf{a}(z))=\cfrac{1}{a_0(z)+\cfrac{1}{a_1(z)+\cfrac{1}{\ddots+\cfrac{1}{a_n(z)}}}}\in\mathbb{F}_2((1/z)). \tag{1.2}$$

Conversely, each power series in $\mathbb{F}_2[[1/z]]$ without constant term

$$c_{-1}z^{-1}+c_{-2}z^{-2}+c_{-3}z^{-3}+\cdots \tag{1.3}$$

admits a continued fraction expansion of form (1.1).

Let a and b be two distinct elements from $\mathbb{F}_2[z]\setminus\mathbb{F}_2$. We consider the continued fraction (1.1) associated with the (a,b)-Thue-Morse sequence

$$\mathbf{t}=(t_0(z),t_1(z),t_2(z),\ldots)=(a,b,b,a,b,a,a,b,\ldots)$$

that we shall denote

$$\mathrm{CF}(a,b):=\mathrm{CF}(\mathbf{t}). \tag{1.4}$$

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Theorem 1.1. *When* $(a,b)=(z,z^6+z^3+z+1)$*, the two power series* $\mathrm{CF}(a,b)$ *and* $\mathrm{CF}(b,a)$ *are algebraic over* $\mathbb{F}_2(z)$*, with minimal polynomials of the form*

$$p_4(z)y^4+p_3(z)y^3+p_2(z)y^2+p_1(z)y+p_0(z)=0$$

where, for $\mathrm{CF}(a,b)$*,*

$$p_0(z)=z^{24}+z^{21}+z^{19}+z^{18}+z^{11}+z^8+z^5+z^3+z+1,$$
$$p_1(z)=z^{27}+z^{25}+z^{22}+z^{20}+z^{19}+z^{15}+z^{12}+z^9+z^7+z^6+z^4+z^3+z^2+z,$$
$$p_2(z)=z^{28}+z^{26}+z^{14}+z^{10}+z^8+z^2,$$
$$p_3(z)=z^{27}+z^{25}+z^{22}+z^{20}+z^{19}+z^{15}+z^{12}+z^9+z^7+z^6+z^4+z^3+z^2+z,$$
$$p_4(z)=z^{26}+z^{21}+z^{19}+z^{18}+z^{16}+z^{14}+z^{12}+z^{11}+z^{10}+z^8+z^5+z^4+z^3+z^2+z,$$

and for $\mathrm{CF}(b,a)$*,*

$$p_0(z)=z^{21}+z^{19}+z^{18}+z^{12}+z^{11}+z^8+z^5+z^3+z,$$
$$p_1(z)=z^{27}+z^{25}+z^{22}+z^{20}+z^{19}+z^{15}+z^{12}+z^9+z^7+z^6+z^4+z^3+z^2+z,$$
$$p_2(z)=z^{28}+z^{26}+z^{14}+z^{10}+z^8+z^2,$$
$$p_3(z)=z^{27}+z^{25}+z^{22}+z^{20}+z^{19}+z^{15}+z^{12}+z^9+z^7+z^6+z^4+z^3+z^2+z,$$
$$p_4(z)=z^{26}+z^{24}+z^{21}+z^{19}+z^{18}+z^{16}+z^{14}+z^{11}+z^{10}+z^8+z^5+z^4+z^3+z^2+z+1.$$

2. Proof

Define the sequences of polynomials $(P_n(z))_{n\geq 0}$ and $(Q_n(z))_{n\geq 0}$ by

$$\begin{pmatrix}P_n(z) & Q_n(z)\\ P_{n-1}(z) & Q_{n-1}(z)\end{pmatrix}:=\begin{pmatrix}t_n(z) & 1\\ 1 & 0\end{pmatrix}\begin{pmatrix}t_{n-1}(z) & 1\\ 1 & 0\end{pmatrix}\cdots\begin{pmatrix}t_0(z) & 1\\ 1 & 0\end{pmatrix}\begin{pmatrix}0 & 1\\ 1 & 0\end{pmatrix}.$$

By the basic properties of continued fractions, we have

$$\mathrm{CF}_n(a,b)=\frac{P_n(z)}{Q_n(z)}\in\mathbb{F}_2((1/z)). \tag{2.1}$$

As formula (2.1) is not efficient for calculating $\mathrm{CF}_n(a,b)$, a fast method is to be derived and described as follows. Define

$$M_n(x)=x^{\deg(t_{2^n-1})}\begin{pmatrix}t_{2^n-1}(1/x) & 1\\ 1 & 0\end{pmatrix}\times x^{\deg(t_{2^n-2})}\begin{pmatrix}t_{2^n-2}(1/x) & 1\\ 1 & 0\end{pmatrix}\times\cdots\times x^{\deg(t_0)}\begin{pmatrix}t_0(1/x) & 1\\ 1 & 0\end{pmatrix},$$

$$W_n(x)=x^{\deg(\bar t_{2^n-1})}\begin{pmatrix}\bar t_{2^n-1}(1/x) & 1\\ 1 & 0\end{pmatrix}\times x^{\deg(\bar t_{2^n-2})}\begin{pmatrix}\bar t_{2^n-2}(1/x) & 1\\ 1 & 0\end{pmatrix}\times\cdots\times x^{\deg(\bar t_0)}\begin{pmatrix}\bar t_0(1/x) & 1\\ 1 & 0\end{pmatrix},$$

where $\bar{\mathbf{t}}$ is the (b,a)-Thue-Morse sequence. By the properties of the Thue-Morse sequence, we have for $n \geq 0$

$$M_{n+1}(x) = W_n(x) \cdot M_n(x),$$
$$W_{n+1}(x) = M_n(x) \cdot W_n(x).$$

Let $x := 1/z$. For each non-zero polynomial $P(z)$, define $\tilde{P}(x)$ to be $P(1/x)$. Then,

$$\mathrm{CF}_n(a,b) = \frac{P_n(z)}{Q_n(z)} = \frac{\tilde{P}_n(x)}{\tilde{Q}_n(x)} \in \mathbb{F}_2((x)) = \mathbb{F}_2((1/z)).$$

Comparing the definition of $M_n(x)$ with the definition of $P_n(x)$ and $Q_n(x)$, we see that

$$M_n(x)_{0,1} = x^{d_n} \tilde{P}_{2^n-1}(x),$$
$$M_n(x)_{0,0} = x^{d_n} \tilde{Q}_{2^n-1}(x),$$

for some positive integer d_n. Hence,

$$\mathrm{CF}_{2^{2n}-1}(a,b) = \frac{\tilde{P}_{2^{2n}-1}(x)}{\tilde{Q}_{2^{2n}-1}(x)} = \frac{M_{2n}(x)_{0,1}}{M_{2n}(x)_{0,0}}. \tag{2.2}$$

Therefore, by the convergence theorem of continued fraction, the algebraicity of $\mathrm{CF}(a,b)$ will be established if it is shown that both $M_{2n}(x)_{0,1}$ and $M_{2n}(x)_{0,0}$ converge to algebraic series in $\mathbb{F}_2[[x]]$.

Actually, we will prove that for all $0 \leq i,j \leq 1$ the four sequences $(M_{2n}(x)_{i,j})_n$, $(M_{2n+1}(x)_{i,j})_n$, $(W_{2n}(x)_{i,j})_n$, and $(W_{2n+1}(x)_{i,j})_n$ converge to algebraic series in $\mathbb{F}_2[[x]]$. For this purpose, we define four 2×2 matrices M^e, M^o, W^e, W^o as follows: For each $T \in \{M^e, M^o, W^e, W^o\}$ and $0 \leq i,j \leq 1$, $T_{i,j}$ is defined to be the unique solution in $\mathbb{F}_2[[x]]$ of the polynomial $\phi(T,i,j)$ under certain initial conditions; the polynomials $\phi(T,i,j)$ and initial conditions are given in Section 3. We will prove that these four matrices, whose components are algebraic by definition, are the limits of $(M_{2n}(x))_n$, $(M_{2n+1}(x))_n$, $(W_{2n}(x))_n$, and $(W_{2n+1}(x))_n$.

Let us explain how the polynomials $\phi(T,i,j)$ and initial conditions are found, and why the solutions exist and are unique. For $0 \leq i,j \leq 1$, the the coefficients of the polynomial $\phi(M^e,i,j)$ (resp. $\phi(M^o,i,j)$, $\phi(W^e,i,j)$, and $\phi(W^o,i,j)$) are the Padé-Hermite approximants of type

$$(175, 175, 175, 175, 175)$$

of the vector

$$(1, T^3, T^6, T^9, T^{12}),$$

where $T = M_{12,i,j}$ (resp. $M_{11,i,j}$, $W_{12,i,j}$, and $W_{11,i,j}$), found by the Derksen algorithm. We take the first 8 terms of $M_{12,i,j}$ (resp. $M_{11,i,j}$, $W_{12,i,j}$, and $W_{11,i,j}$) as initial conditions for $\phi(M^e,i,j)$ (resp. $\phi(M^o,i,j)$, $\phi(W^e,i,j)$, and $\phi(W^o,i,j)$). The following fact will be used to ensure that the solution exists and is unique: let $P(x,y) \in \mathbb{F}_2[x,y]$ and for each series $f(x) = \sum_{n=0}^{\infty} a_n x^n \in \mathbb{F}_2[[x]]$ denote the partial sum $\sum_{j=0}^{n-1} a_j x^j$ by $f_n(x)$ for $n \geq 0$. If for some $n \geq 0$ and $a_0, a_1, \ldots, a_{n-1} \in \mathbb{F}_2$ $P(x, \sum_{j=0}^{n-1} a_j x^j) = O(x^n)$ and $Q(x,y) := P(x, \sum_{j=0}^{n-1} a_j x^j + x^n y)$ can be written as $x^m \sum_{j=0}^{\infty} q_j(x) y^j$ where $q_j(x)$ are polynomials for $j \geq 0$, $q_1(0) = 1$, and $q_j(0) = 0$ for $j > 1$, then there exists a unique solution $f(x) \in \mathbb{F}_2[[x]]$ of $P(x, f(x)) = 0$ that satisfies the initial condition $f_n(x) = \sum_{j=0}^{n-1} a_j x^j$.

We state two lemmas concerning the four matrices M^e, M^o, W^e, W^o. The first one is about relations between them; the second, about the structure of the each matrix.

Lemma 2.1. *We have*

$$M^e = W^o \cdot M^o, \tag{2.3}$$

$$M^o = W^e \cdot M^e, \tag{2.4}$$

$$W^e = M^o \cdot W^o, \tag{2.5}$$

$$W^o = M^e \cdot W^e. \tag{2.6}$$

Proof. We give the proof of the identity

$$M^e_{0,0} = W^o_{0,0}M^o_{0,0} + W^o_{0,1}M^o_{1,0},$$

the proofs of the others being similar.

First, we compute the minimal polynomials of $W^o_{0,0}M^o_{0,0}$ and $W^o_{0,1}M^o_{1,0}$. We know that

$$P(x,y) = \mathrm{Res}_z\left(\phi(W^o,0,0)(x,z),\ z^{12}\cdot\phi(M^o,0,0)(x,y/z)\right)$$

is an annihilating polynomial of $W^o_{0,0}M^o_{0,0}$. We use Padé-Hermite approximation to find a candidate for the minimal polynomial of $W^o_{0,0}M^o_{0,0}$, that will be called $\phi_0(x,y)$. To prove that $\phi_0(x,y)$ is indeed the minimal polynomial, it suffices to prove that it is an irreducible factor of $P(x,y)$ of multiplicity m and that $Q(x,y) := P(x,y)/\phi_0(x,y)^m$ is not an annihilating polynomial of $W^o_{0,0}M^o_{0,0}$. We verify the first point directly. For the second point, we truncate $W^o_{0,0}M^o_{0,0}$ to order 630 and substitute it for y in $Q(x,y)$. We get a series of valuation less than 630, which proves that $Q(x,y)$ is not an annihilating polynomial of $W^o_{0,0}M^o_{0,0}$. We find the minimal polynomial $\phi_1(x,y)$ of $W^o_{0,1}M^o_{1,0}$ in a similar way.

Now we prove that $\phi(M^e,0,0)$ is the minimal polynomial of $W^o_{0,0}M^o_{0,0}+W^o_{0,1}M^o_{1,0}$. We know that

$$S(x,y) = \mathrm{Res}_z\left(\phi_0(x,z),\ \phi_1(x,y+z)\right)$$

is an annihilating of $W^o_{0,0}M^o_{0,0} + W^o_{0,1}M^o_{1,0}$. We verify that $\phi(M^e,0,0)$ is an irreducible factor of $S(x,y)$ of multiplicity μ, and that $Q(x,y) := S(x,y)/\phi(M^e,0,0)^\mu$ is not an annihilating polynomial of $W^o_{0,0}M^o_{0,0}+W^o_{0,1}M^o_{1,0}$. To see the last point, we truncate $W^o_{0,0}M^o_{0,0} + W^o_{0,1}M^o_{1,0}$ to order 770 and substitute it for y in $Q(x,y)$. We get a series of valuation less than 770, and therefore $Q(x,y)$ is not an annihilating polynomial of $W^o_{0,0}M^o_{0,0} + W^o_{0,1}M^o_{1,0}$.

Finally, the first 16 terms of $M^e_{0,0}$ and $W^o_{0,0}M^o_{0,0} + W^o_{0,1}M^o_{1,0}$ coincide. As these first terms determine a unique solution of $\phi(M^e,0,0)$, we know that the two series are one and the same. □

Define

$$R^e = \begin{pmatrix}1 & 0\\ 0 & 1\end{pmatrix} \qquad \text{and} \qquad R^o = \begin{pmatrix}1 & 0\\ 0 & 1\end{pmatrix}.$$

Lemma 2.2. *For all integers $k \geq 2$ and $u = 2^{2k-1}$, the following identities hold.*

$$\begin{aligned}M^e[{:}\,14u] = {}& M^e[{:}\,7u] + x^{2u}M^e[{:}\,5u] + x^{3u}M^e[{:}\,4u] + x^{4u}M^e[{:}\,3u] + x^{2u}M^e[{:}\,7u]\\ &+ x^{4u}M^e[{:}\,5u] + x^{5u}M^e[{:}\,4u] + x^{6u}M^e[{:}\,3u] + x^{3u}M^e[{:}\,7u]\\ &+ x^{5u}M^e[{:}\,5u] + x^{6u}M^e[{:}\,4u] + x^{7u}M^e[{:}\,3u] + x^{7u}M^e[{:}\,7u]\\ &+ x^{8u}M^e[{:}\,6u] + x^{12u}M^e[{:}\,2u] + (x^{7u} + x^{9u} + x^{10u})R^e,\end{aligned}$$

$$\begin{aligned}W^e[:14u] = {} & W^e[:7u] + x^{2u}W^e[:5u] + x^{3u}W^e[:4u] + x^{4u}W^e[:3u] + x^{2u}W^e[:7u]\\ & + x^{4u}W^e[:5u] + x^{5u}W^e[:4u] + x^{6u}W^e[:3u] + x^{3u}W^e[:7u]\\ & + x^{5u}W^e[:5u] + x^{6u}W^e[:4u] + x^{7u}W^e[:3u] + x^{7u}W^e[:7u]\\ & + x^{8u}W^e[:6u] + x^{12u}W^e[:2u] + (x^{7u} + x^{9u} + x^{10u})R^e.\end{aligned}$$

For all integers $k \geq 2$ and $u = 2^{2k}$, the following identities hold.

$$\begin{aligned}M^o[:14u] = {} & M^o[:7u] + x^{2u}M^o[:5u] + x^{3u}M^o[:4u] + x^{4u}M^o[:3u] + x^{2u}M^o[:7u]\\ & + x^{4u}M^o[:5u] + x^{5u}M^o[:4u] + x^{6u}M^o[:3u] + x^{3u}M^o[:7u]\\ & + x^{5u}M^o[:5u] + x^{6u}M^o[:4u] + x^{7u}M^o[:3u] + x^{7u}M^o[:7u]\\ & + x^{8u}M^o[:6u] + x^{12u}M^o[:2u] + (x^{7u} + x^{9u} + x^{10u})R^o,\\ W^o[:14u] = {} & W^o[:7u] + x^{2u}W^o[:5u] + x^{3u}W^o[:4u] + x^{4u}W^o[:3u] + x^{2u}W^o[:7u]\\ & + x^{4u}W^o[:5u] + x^{5u}W^o[:4u] + x^{6u}W^o[:3u] + x^{3u}W^o[:7u]\\ & + x^{5u}W^o[:5u] + x^{6u}W^o[:4u] + x^{7u}W^o[:3u] + x^{7u}W^o[:7u]\\ & + x^{8u}W^o[:6u] + x^{12u}W^o[:2u] + (x^{7u} + x^{9u} + x^{10u})R^o.\end{aligned}$$

Proof. To prove Lemma 2.2 we first construct an automaton for each sequence concerned, and then transform the conditions on infinitely many k's into finitely many conditions on the states of the automaton. In the following, we will prove that for $T = M^o_{0,0}$, for all integer $k \geq 2$ and $u = 2^{2k}$,

$$\begin{aligned}T[:14u] = {} & T[:7u] + x^{2u}T[:5u] + x^{3u}T[:4u] + x^{4u}T[:3u] + x^{2u}T[:7u] + x^{4u}T[:5u]\\ & + x^{5u}T[:4u] + x^{6u}T[:3u] + x^{3u}T[:7u] + x^{5u}T[:5u] + x^{6u}T[:4u]\\ & + x^{7u}T[:3u] + x^{7u}T[:7u] + x^{8u}T[:6u] + x^{12u}T[:2u].\end{aligned}$$

The proof of the other 15 cases are similar. We break down the above identity into 7 parts:

$$\begin{aligned}0 &= x^{4u}T[3u:4u] + x^{3u}T[4u:5u] + x^{2u}T[5u:6u] + T[7u:8u],\\ 0 &= x^{8u}T[:u] + x^{4u}T[4u:5u] + x^{3u}T[5u:6u] + x^{2u}T[6u:7u] + T[8u:9u],\\ 0 &= x^{8u}T[u:2u] + x^{6u}T[3u:4u] + x^{5u}T[4u:5u] + x^{3u}T[6u:7u]\\ &\quad + T[9u:10u],\\ 0 &= x^{8u}T[2u:3u] + x^{7u}T[3u:4u] + T[10u:11u],\\ 0 &= x^{8u}T[3u:4u] + x^{7u}T[4u:5u] + T[11u:12u],\\ 0 &= x^{12u}T[:u] + x^{8u}T[4u:5u] + x^{7u}T[5u:6u] + T[12u:13u],\\ 0 &= x^{12u}T[u:2u] + x^{8u}T[5u:6u] + x^{7u}T[6u:7u] + T[13u:14u],\end{aligned}$$

which can be rewritten as

$$0 = T[[11w]_2] + T[[100w]_2] + T[[101w]_2] + T[[111w]_2], \tag{2.7}$$

$$0 = T[[w]_2] + T[[100w]_2] + T[[101w]_2] + T[[110w]_2] + T[[1000w]_2], \tag{2.8}$$

$$0 = T[[1w]_2] + T[[11w]_2] + T[[100w]_2] + T[[110w]_2] + T[[1001w]_2], \tag{2.9}$$

$$0 = T[[10w]_2] + T[[11w]_2] + T[[1010w]_2], \tag{2.10}$$

$$0 = T[[11w]_2] + T[[100w]_2] + T[[1011w]_2], \tag{2.11}$$

$$0 = T[[w]_2] + T[[100w]_2] + T[[101w]_2] + T[[1100w]_2], \tag{2.12}$$

$$0 = T[[1w]_2] + T[[101w]_2] + T[[110w]_2] + T[[1101w]_2], \tag{2.13}$$

for all binary word w of length $2k$ and $w \neq 0^{2k}$, and

$$0 = T[[11w]_2] + T[[100w]_2] + T[[101w]_2] + T[[111w]_2], \tag{2.14}$$

$$0 = T[[w]_2] + T[[100w]_2] + T[[101w]_2] + T[[110w]_2] + T[[1000w]_2], \tag{2.15}$$

$$0 = T[[1w]_2] + T[[11w]_2] + T[[100w]_2] + T[[110w]_2] + T[[1001w]_2], \tag{2.16}$$

$$0 = T[[10w]_2] + T[[11w]_2] + T[[1010w]_2], \tag{2.17}$$

$$0 = T[[11w]_2] + T[[100w]_2] + T[[1011w]_2], \tag{2.18}$$

$$0 = T[[w]_2] + T[[100w]_2] + T[[101w]_2] + T[[1100w]_2], \tag{2.19}$$

$$0 = T[[1w]_2] + T[[101w]_2] + T[[110w]_2] + T[[1101w]_2], \tag{2.20}$$

for $w = 0^{2k}$.

First we calculate an 2-automaton that generates T from its minimal polynomial and its first terms. This automaton has 5216 states; its transition function and output function can be found in the annex. Let $A(s, w)$ denote the state reached after reading w from right to left starting from the state s, and τ the output function. Define

$$E_{2k} = \{A(i, w) : |w| = 2k, w \neq 0^{2k}\}.$$

Identities (2.7) through (2.20) can be written as

$$0 = \tau(A(s, 11)) + \tau(A(s, 100)) + \tau(A(s, 101)) + \tau(A(s, 111)), \tag{2.21}$$

$$\begin{aligned} 0 = {} & \tau(A(s, \epsilon)) + \tau(A(s, 100)) + \tau(A(s, 101)) + \tau(A(s, 110)) \\ & + \tau(A(s, 1000)), \end{aligned} \tag{2.22}$$

$$\begin{aligned} 0 = {} & \tau(A(s, 1)) + \tau(A(s, 11)) + \tau(A(s, 100)) + \tau(A(s, 110)) \\ & + \tau(A(s, 1001)), \end{aligned} \tag{2.23}$$

$$0 = \tau(A(s, 10)) + \tau(A(s, 11)) + \tau(A(s, 1010)), \tag{2.24}$$

$$0 = \tau(A(s, 11)) + \tau(A(s, 100)) + \tau(A(s, 1011)), \tag{2.25}$$

$$0 = \tau(A(s, \epsilon)) + \tau(A(s, 100)) + \tau(A(s, 101)) + \tau(A(s, 1100)), \tag{2.26}$$

$$0 = \tau(A(s, 1)) + \tau(A(s, 101)) + \tau(A(s, 110)) + \tau(A(s, 1101)), \tag{2.27}$$

for all $s \in E_{2k}$, and

$$0 = \tau(A(s, 11)) + \tau(A(s, 100)) + \tau(A(s, 101)) + \tau(A(s, 111)), \tag{2.28}$$

$$\begin{aligned} 0 = {} & \tau(A(s, \epsilon)) + \tau(A(s, 100)) + \tau(A(s, 101)) + \tau(A(s, 110)) \\ & + \tau(A(s, 1000)), \end{aligned} \tag{2.29}$$

$$\begin{aligned} 0 = {} & \tau(A(s, 1)) + \tau(A(s, 11)) + \tau(A(s, 100)) + \tau(A(s, 110)) \\ & + \tau(A(s, 1001)), \end{aligned} \tag{2.30}$$

$$0 = \tau(A(s, 10)) + \tau(A(s, 11)) + \tau(A(s, 1010)), \tag{2.31}$$

$$0 = \tau(A(s, 11)) + \tau(A(s, 100)) + \tau(A(s, 1011)), \tag{2.32}$$

$$0 = \tau(A(s, \epsilon)) + \tau(A(s, 100)) + \tau(A(s, 101)) + \tau(A(s, 1100)), \tag{2.33}$$

$$0 = \tau(A(s, 1)) + \tau(A(s, 101)) + \tau(A(s, 110)) + \tau(A(s, 1101)), \tag{2.34}$$

for $s = A(i, 0^{2k})$. We find that $(A(i, 0^{30}), E_{30}) = (A(i, 0^{24}), E_{24})$, so that we only have to verify that identities (2.21) through (2.34) hold for $2 \le k \le 15$, which turns out to be true. $\square$

In the following lemma, we express M_{2k}, M_{2k+1}, W_{2k}, and W_{2k+1} in terms of M^e, M^o, W^e, and W^o.

Lemma 2.3. *For all integer $k \ge 2$, and $u = 2^{2k-1}$,*

$$\begin{aligned} M_{2k} &= M^e[:7u] + x^{2u}M^e[:5u] + x^{3u}M^e[:4u] + x^{4u}M^e[:3u] + x^{7u}R^e, \\ W_{2k} &= W^e[:7u] + x^{2u}W^e[:5u] + x^{3u}W^e[:4u] + x^{4u}W^e[:3u] + x^{7u}R^e. \end{aligned}$$

For all integer $k \ge 2$, and $u = 2^{2k}$,

$$\begin{aligned} M_{2k+1} &= M^o[:7u] + x^{2u}M^o[:5u] + x^{3u}M^o[:4u] + x^{4u}M^o[:3u] + x^{7u}R^o, \\ W_{2k+1} &= W^o[:7u] + x^{2u}W^o[:5u] + x^{3u}W^o[:4u] + x^{4u}W^o[:3u] + x^{7u}R^o. \end{aligned}$$

Proof. We call the four identities in Lemma 2.3 also by the name M_{2k}, W_{2k}, M_{2k+1}, and W_{2k+1}. For $n = 2$, the identities can be verified directly. For $n \ge 2$, we claim that

$$\begin{aligned} M_{2k} \wedge W_{2k} &\Rightarrow M_{2k+1} \wedge W_{2k+1}, \\ M_{2k+1} \wedge W_{2k+1} &\Rightarrow M_{2k+2} \wedge W_{2k+2}. \end{aligned}$$

We give the proof of

$$M_{2k} \wedge W_{2k} \Rightarrow M_{2k+1},$$

the other ones being similar. Set $u = 2^{2k}$ and $v = 2^{2k-1}$. By definition and induction hypothesis, the left side of identity M_{2k+1} is equal to

$$\begin{aligned} W_{2k}M_{2k} = \big(&W^e[:7v] + x^{2v}W^e[:5v] + x^{3v}W^e[:4v] + x^{4v}W^e[:3v] + x^{7u}R^e \\ &\big) \times \big(M^e[:7v] + x^{2v}M^e[:5v] + x^{3v}M^e[:4v] + x^{4v}M^e[:3v] + x^{7u}R^e \\ &\big); \end{aligned} \tag{2.35}$$

Call this expression lhs. Note that both sides of identity M_{2k+1} have the same term of highest degree $x^{14v}R^o$. Therefore we only need to prove that their difference is $O(x^{14v})$. Using Lemma 2.1 it can be seen that the right side of identity M_{2k+1} is congruent, modulo x^{14v}, to

$$\begin{aligned} W^e[:14v]M^e[:14v] + x^{4v}W^e[:10v]M^e[:10v] + x^{6v}W^e[:8v]M^e[:8v] \\ + x^{8v}W^e[:6v]M^e[:6v]. \end{aligned}$$

For all $n \le 14$, replace the occurrences of $W^e[:n \cdot v]$ and $M^e[:n \cdot v]$ in the above expression by the reduction modulo $x^{n \cdot v}$ of the right side of the corresponding identity in Lemma 2.2 and get a new expression, which we call rhs. Define

$$\begin{aligned} X &:= x^v, \\ a_n &:= W^e[n \cdot v : (n+1) \cdot v]/X^n, \\ b_n &:= M^e[n \cdot v : (n+1) \cdot v]/X^n, \\ c &:= R^e. \end{aligned}$$

Using the notation introduced above, we can represent the expressions lhs (2.35) and rhs as polynomials in $\mathbb{F}_2[a_1, ..., a_{14}, b_1, ..., b_{14}, c][X]$. Note that it is not a problem that a_j commutes with b_k while W^e does not commute with M^e, because in the expressions concerned, the products of W^e-terms and M^e-terms are always in the same order. We let the computer do the simplification and check that the difference between these two polynomials is indeed $O(X^{14})$, which completes the proof. $\square$

Proof of Theorem 1.1. We prove the theorem for $\mathrm{CF}(a,b)$; for $\mathrm{CF}(b,a)$, the proof is similar. By Lemma 2.3, we have For all $0 \le j,k \le 1$,

$$\begin{aligned}
\lim_{n\to\infty} M_{2n,j,k} &= M^e_{j,k},\\
\lim_{n\to\infty} M_{2n+1,j,k} &= M^o_{j,k},\\
\lim_{n\to\infty} W_{2n,j,k} &= W^e_{j,k},\\
\lim_{n\to\infty} W_{2n+1,j,k} &= W^o_{j,k}.
\end{aligned}$$

Let $z = 1/x$. By the convergence theorem and identity (2.2),

$$\mathrm{CF}(a,b) = \frac{M^e_{0,1}(x)}{M^e_{0,0}(x)}.$$

By definition, $\phi(M^e,0,1)$ and $\phi(M^e,0,0)$ are minimal polynomials of $M^e_{0,1}$ and $M^e_{0,0}$. Therefore

$$P(x,y) = \mathrm{Res}_t\left(\phi(M^e,0,1)(x,t), y^{12}\phi(M^e,0,1)(x,t/y)\right)$$

is an annihilating polynomial of $f(x) = M^e_{0,1}/M^e_{0,0}$.

Define

$$Q(x,y) = q_4(x)y^4 + q_3(x)y^3 + q_2(x)y^2 + q_1(x)y + q_0(x),$$

where

$$\begin{aligned}
q_0(x) &= x^{28}+x^{27}+x^{25}+x^{23}+x^{20}+x^{17}+x^{10}+x^9+x^7+x^4,\\
q_1(x) &= x^{27}+x^{26}+x^{25}+x^{24}+x^{22}+x^{21}+x^{19}+x^{16}+x^{13}+x^9+x^8+x^6\\
&\quad +x^3+x,\\
q_2(x) &= x^{26}+x^{20}+x^{18}+x^{14}+x^2+1,\\
q_3(x) &= x^{27}+x^{26}+x^{25}+x^{24}+x^{22}+x^{21}+x^{19}+x^{16}+x^{13}+x^9+x^8+x^6\\
&\quad +x^3+x,\\
q_4(x) &= x^{27}+x^{26}+x^{25}+x^{24}+x^{23}+x^{20}+x^{18}+x^{17}+x^{16}+x^{14}+x^{12}+x^{10}\\
&\quad +x^9+x^7+x^2.
\end{aligned}$$

The polynomial $Q(x,y)$ is the candidate for the minimal polynomial of $f(x)$ found by Padé-Hermite approximation. To prove that it is indeed the minimal polynomial of $f(x)$, we only need to prove that it is an irreducible factor of $P(x,y)$ of multiplicity m and $R(x,y) := P(x,y)/Q(x,y)^m$ is not an annihilating polynomial of $f(x)$. We verify the first point directly. For the second point, we find that when we truncate $f(x)$ to order 216, and substitute it for y in $R(z,y)$, we get a series with valuation smaller than 216, which proves that $R(z,y)$ is not an annihilating polynomial of $f(x)$. Finally, $z^{12}Q(1/z,y)$ is the minimal polynomial of $\mathrm{CF}(a,b) = f(1/z)$. $\square$

3. Annexe

All 16 polynomials are of the form

$$p_0(x) + p_3(x)y^3 + p_6(x)y^6 + p_9(x)y^9 + p_{12}(x)y^{12}.$$

The coefficients $p_j(x)$ and the 16 initial terms to determine the solutions uniquely are given below.

For $\phi(M^e, 0, 0)$:

$$\begin{aligned}
p_0(x) &= x^{162} + x^{160} + x^{154} + x^{150} + x^{148} + x^{146} + x^{142} + x^{124} + x^{118} + x^{116} \\
&\quad + x^{114} + x^{112} + x^{108} + x^{106} + x^{102} + x^{98} + x^{94} + x^{92} + x^{84} + x^{82} \\
&\quad + x^{74} + x^{68} + x^{66} + x^{64} + x^{62} + x^{60} + x^{56} + x^{54} + x^{50} + x^{46} + x^{36} \\
&\quad + x^{28} + x^{26} + x^{22} + x^{12}, \\
p_3(x) &= x^{158} + x^{150} + x^{148} + x^{142} + x^{136} + x^{134} + x^{132} + x^{128} + x^{120} + x^{118} \\
&\quad + x^{116} + x^{114} + x^{102} + x^{100} + x^{96} + x^{94} + x^{90} + x^{86} + x^{84} + x^{78} \\
&\quad + x^{76} + x^{74} + x^{72} + x^{70} + x^{68} + x^{66} + x^{64} + x^{62} + x^{60} + x^{56} + x^{54} \\
&\quad + x^{46} + x^{44} + x^{42} + x^{36} + x^{32} + x^{28} + x^{26} + x^{24} + x^{22} + x^{20} + x^{8}, \\
p_6(x) &= x^{156} + x^{152} + x^{150} + x^{146} + x^{140} + x^{136} + x^{134} + x^{132} + x^{130} + x^{124} \\
&\quad + x^{122} + x^{118} + x^{110} + x^{102} + x^{96} + x^{92} + x^{90} + x^{86} + x^{80} + x^{76} \\
&\quad + x^{66} + x^{64} + x^{60} + x^{58} + x^{56} + x^{50} + x^{48} + x^{44} + x^{36} + x^{34} + x^{32} \\
&\quad + x^{28} + x^{24} + x^{22} + x^{20} + x^{14} + x^{10} + x^{4} + x^{2} + 1, \\
p_9(x) &= x^{160} + x^{158} + x^{154} + x^{148} + x^{146} + x^{142} + x^{140} + x^{136} + x^{134} + x^{132} \\
&\quad + x^{126} + x^{124} + x^{122} + x^{120} + x^{118} + x^{116} + x^{114} + x^{110} + x^{108} \\
&\quad + x^{106} + x^{104} + x^{98} + x^{94} + x^{90} + x^{86} + x^{84} + x^{78} + x^{76} + x^{72} + x^{68} \\
&\quad + x^{60} + x^{56} + x^{54} + x^{52} + x^{46} + x^{42} + x^{38} + x^{34} + x^{32} + x^{28} + x^{20} \\
&\quad + x^{18} + x^{14} + x^{10} + x^{8} + x^{6} + x^{4} + x^{2}, \\
p_{12}(x) &= x^{160} + x^{152} + x^{144} + x^{128} + x^{80} + x^{72} + x^{56} + x^{24} + x^{16} + 1,
\end{aligned}$$

and the initial terms are [1, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0, 1, 0].

For $\phi(M^e, 0, 1)$:

$$\begin{aligned}
p_0(x) &= x^{147} + x^{146} + x^{143} + x^{142} + x^{140} + x^{139} + x^{138} + x^{135} + x^{134} + x^{133} \\
&\quad + x^{130} + x^{128} + x^{127} + x^{126} + x^{125} + x^{123} + x^{122} + x^{121} + x^{118} \\
&\quad + x^{110} + x^{109} + x^{108} + x^{105} + x^{104} + x^{102} + x^{99} + x^{98} + x^{97} + x^{96} \\
&\quad + x^{95} + x^{93} + x^{92} + x^{91} + x^{89} + x^{87} + x^{84} + x^{83} + x^{82} + x^{81} + x^{80} \\
&\quad + x^{78} + x^{75} + x^{74} + x^{73} + x^{72} + x^{71} + x^{70} + x^{65} + x^{63} + x^{62} + x^{60} \\
&\quad + x^{59} + x^{58} + x^{57} + x^{53} + x^{51} + x^{50} + x^{46} + x^{45} + x^{44} + x^{43} + x^{42} \\
&\quad + x^{41} + x^{40} + x^{38} + x^{37} + x^{35} + x^{31} + x^{30} + x^{26} + x^{25} + x^{23} + x^{18}, \\
p_3(x) &= x^{145} + x^{142} + x^{136} + x^{131} + x^{130} + x^{128} + x^{127} + x^{123} + x^{122} + x^{120} \\
&\quad + x^{116} + x^{114} + x^{110} + x^{108} + x^{107} + x^{105} + x^{103} + x^{100} + x^{99} + x^{97} \\
&\quad + x^{96} + x^{91} + x^{90} + x^{88} + x^{87} + x^{83} + x^{82} + x^{81} + x^{80} + x^{78} + x^{76}
\end{aligned}$$

$$
\begin{aligned}
&+x^{74}+x^{73}+x^{72}+x^{68}+x^{66}+x^{62}+x^{60}+x^{59}+x^{55}+x^{54}+x^{52}\\
&+x^{51}+x^{46}+x^{40}+x^{35}+x^{34}+x^{33}+x^{32}+x^{31}+x^{30}+x^{27}+x^{26}\\
&+x^{25}+x^{22}+x^{20}+x^{19}+x^{15}+x^{14}+x^{12}+x^{11}+x^{9},\\
p_6(x)=&\,x^{144}+x^{143}+x^{142}+x^{140}+x^{134}+x^{133}+x^{131}+x^{130}+x^{129}+x^{128}\\
&+x^{127}+x^{124}+x^{122}+x^{121}+x^{119}+x^{118}+x^{117}+x^{113}+x^{112}\\
&+x^{109}+x^{108}+x^{106}+x^{100}+x^{99}+x^{97}+x^{96}+x^{95}+x^{91}+x^{89}\\
&+x^{86}+x^{84}+x^{83}+x^{81}+x^{78}+x^{76}+x^{75}+x^{73}+x^{72}+x^{71}+x^{70}\\
&+x^{69}+x^{68}+x^{67}+x^{64}+x^{62}+x^{61}+x^{59}+x^{56}+x^{52}+x^{51}+x^{50}\\
&+x^{47}+x^{45}+x^{41}+x^{39}+x^{36}+x^{34}+x^{33}+x^{31}+x^{27}+x^{25}+x^{24}\\
&+x^{23}+x^{22}+x^{21}+x^{17}+x^{15}+x^{14}+x^{13}+x^{12}+x^{11}+x^{10}+x^{9}\\
&+x^{6},\\
p_9(x)=&\,x^{143}+x^{141}+x^{140}+x^{139}+x^{138}+x^{137}+x^{136}+x^{133}+x^{132}+x^{131}\\
&+x^{129}+x^{128}+x^{122}+x^{121}+x^{118}+x^{117}+x^{116}+x^{114}+x^{113}\\
&+x^{112}+x^{111}+x^{109}+x^{107}+x^{104}+x^{103}+x^{101}+x^{100}+x^{97}+x^{91}\\
&+x^{89}+x^{88}+x^{86}+x^{82}+x^{80}+x^{77}+x^{76}+x^{75}+x^{73}+x^{72}+x^{67}\\
&+x^{66}+x^{64}+x^{63}+x^{61}+x^{57}+x^{55}+x^{54}+x^{53}+x^{52}+x^{50}+x^{48}\\
&+x^{46}+x^{44}+x^{43}+x^{42}+x^{41}+x^{39}+x^{31}+x^{28}+x^{25}+x^{23}+x^{20}\\
&+x^{15}+x^{14}+x^{13}+x^{12}+x^{10}+x^{8}+x^{7}+x^{6}+x^{5}+x^{3},\\
p_{12}(x)=&\,x^{142}+x^{141}+x^{139}+x^{138}+x^{137}+x^{136}+x^{135}+x^{132}+x^{130}+x^{129}\\
&+x^{127}+x^{126}+x^{125}+x^{124}+x^{123}+x^{122}+x^{121}+x^{120}+x^{119}\\
&+x^{118}+x^{117}+x^{116}+x^{115}+x^{114}+x^{113}+x^{112}+x^{111}+x^{110}\\
&+x^{109}+x^{108}+x^{107}+x^{106}+x^{105}+x^{104}+x^{103}+x^{102}+x^{101}\\
&+x^{100}+x^{99}+x^{98}+x^{97}+x^{96}+x^{95}+x^{94}+x^{93}+x^{92}+x^{91}+x^{90}\\
&+x^{89}+x^{88}+x^{87}+x^{86}+x^{85}+x^{84}+x^{83}+x^{82}+x^{81}+x^{80}+x^{79}\\
&+x^{78}+x^{77}+x^{76}+x^{75}+x^{74}+x^{73}+x^{72}+x^{71}+x^{70}+x^{69}+x^{68}\\
&+x^{67}+x^{66}+x^{65}+x^{64}+x^{63}+x^{60}+x^{54}+x^{53}+x^{51}+x^{48}+x^{46}\\
&+x^{45}+x^{43}+x^{42}+x^{41}+x^{40}+x^{39}+x^{36}+x^{34}+x^{33}+x^{31}+x^{30}\\
&+x^{29}+x^{28}+x^{27}+x^{26}+x^{25}+x^{24}+x^{23}+x^{22}+x^{21}+x^{20}+x^{19}\\
&+x^{18}+x^{17}+x^{16}+x^{15}+x^{12}+x^{6}+x^{5}+x^{3}+1,
\end{aligned}
$$

and the initial terms are [0, 1, 0, 0, 0, 1, 0, 0, 1, 0, 0, 1, 1, 0, 0, 1].

For $\phi(M^e, 1, 0)$:

$$
\begin{aligned}
p_0(x)=&\,x^{147}+x^{146}+x^{143}+x^{142}+x^{140}+x^{139}+x^{138}+x^{135}+x^{134}+x^{133}\\
&+x^{130}+x^{128}+x^{127}+x^{126}+x^{125}+x^{123}+x^{122}+x^{121}+x^{118}\\
&+x^{110}+x^{109}+x^{108}+x^{105}+x^{104}+x^{102}+x^{99}+x^{98}+x^{97}+x^{96}\\
&+x^{95}+x^{93}+x^{92}+x^{91}+x^{89}+x^{87}+x^{84}+x^{83}+x^{82}+x^{81}+x^{80}
\end{aligned}
$$

$$
\begin{aligned}
&+ x^{78} + x^{75} + x^{74} + x^{73} + x^{72} + x^{71} + x^{70} + x^{65} + x^{63} + x^{62} + x^{60}\\
&+ x^{59} + x^{58} + x^{57} + x^{53} + x^{51} + x^{50} + x^{46} + x^{45} + x^{44} + x^{43} + x^{42}\\
&+ x^{41} + x^{40} + x^{38} + x^{37} + x^{35} + x^{31} + x^{30} + x^{26} + x^{25} + x^{23} + x^{18},\\
p_3(x) = {}& x^{145} + x^{142} + x^{136} + x^{131} + x^{130} + x^{128} + x^{127} + x^{123} + x^{122} + x^{120}\\
&+ x^{116} + x^{114} + x^{110} + x^{108} + x^{107} + x^{105} + x^{103} + x^{100} + x^{99} + x^{97}\\
&+ x^{96} + x^{91} + x^{90} + x^{88} + x^{87} + x^{83} + x^{82} + x^{81} + x^{80} + x^{78} + x^{76}\\
&+ x^{74} + x^{73} + x^{72} + x^{68} + x^{66} + x^{62} + x^{60} + x^{59} + x^{55} + x^{54} + x^{52}\\
&+ x^{51} + x^{46} + x^{40} + x^{35} + x^{34} + x^{33} + x^{32} + x^{31} + x^{30} + x^{27} + x^{26}\\
&+ x^{25} + x^{22} + x^{20} + x^{19} + x^{15} + x^{14} + x^{12} + x^{11} + x^{9},\\
p_6(x) = {}& x^{144} + x^{143} + x^{142} + x^{140} + x^{134} + x^{133} + x^{131} + x^{130} + x^{129} + x^{128}\\
&+ x^{127} + x^{124} + x^{122} + x^{121} + x^{119} + x^{118} + x^{117} + x^{113} + x^{112}\\
&+ x^{109} + x^{108} + x^{106} + x^{100} + x^{99} + x^{97} + x^{96} + x^{95} + x^{91} + x^{89}\\
&+ x^{86} + x^{84} + x^{83} + x^{81} + x^{78} + x^{76} + x^{75} + x^{73} + x^{72} + x^{71} + x^{70}\\
&+ x^{69} + x^{68} + x^{67} + x^{64} + x^{62} + x^{61} + x^{59} + x^{56} + x^{52} + x^{51} + x^{50}\\
&+ x^{47} + x^{45} + x^{41} + x^{39} + x^{36} + x^{34} + x^{33} + x^{31} + x^{27} + x^{25} + x^{24}\\
&+ x^{23} + x^{22} + x^{21} + x^{17} + x^{15} + x^{14} + x^{13} + x^{12} + x^{11} + x^{10} + x^{9}\\
&+ x^{6},\\
p_9(x) = {}& x^{143} + x^{141} + x^{140} + x^{139} + x^{138} + x^{137} + x^{136} + x^{133} + x^{132} + x^{131}\\
&+ x^{129} + x^{128} + x^{122} + x^{121} + x^{118} + x^{117} + x^{116} + x^{114} + x^{113}\\
&+ x^{112} + x^{111} + x^{109} + x^{107} + x^{104} + x^{103} + x^{101} + x^{100} + x^{97} + x^{91}\\
&+ x^{89} + x^{88} + x^{86} + x^{82} + x^{80} + x^{77} + x^{76} + x^{75} + x^{73} + x^{72} + x^{67}\\
&+ x^{66} + x^{64} + x^{63} + x^{61} + x^{57} + x^{55} + x^{54} + x^{53} + x^{52} + x^{50} + x^{48}\\
&+ x^{46} + x^{44} + x^{43} + x^{42} + x^{41} + x^{39} + x^{31} + x^{28} + x^{25} + x^{23} + x^{20}\\
&+ x^{15} + x^{14} + x^{13} + x^{12} + x^{10} + x^{8} + x^{7} + x^{6} + x^{5} + x^{3},\\
p_{12}(x) = {}& x^{142} + x^{141} + x^{139} + x^{138} + x^{137} + x^{136} + x^{135} + x^{132} + x^{130} + x^{129}\\
&+ x^{127} + x^{126} + x^{125} + x^{124} + x^{123} + x^{122} + x^{121} + x^{120} + x^{119}\\
&+ x^{118} + x^{117} + x^{116} + x^{115} + x^{114} + x^{113} + x^{112} + x^{111} + x^{110}\\
&+ x^{109} + x^{108} + x^{107} + x^{106} + x^{105} + x^{104} + x^{103} + x^{102} + x^{101}\\
&+ x^{100} + x^{99} + x^{98} + x^{97} + x^{96} + x^{95} + x^{94} + x^{93} + x^{92} + x^{91} + x^{90}\\
&+ x^{89} + x^{88} + x^{87} + x^{86} + x^{85} + x^{84} + x^{83} + x^{82} + x^{81} + x^{80} + x^{79}\\
&+ x^{78} + x^{77} + x^{76} + x^{75} + x^{74} + x^{73} + x^{72} + x^{71} + x^{70} + x^{69} + x^{68}\\
&+ x^{67} + x^{66} + x^{65} + x^{64} + x^{63} + x^{60} + x^{54} + x^{53} + x^{51} + x^{48} + x^{46}\\
&+ x^{45} + x^{43} + x^{42} + x^{41} + x^{40} + x^{39} + x^{36} + x^{34} + x^{33} + x^{31} + x^{30}\\
&+ x^{29} + x^{28} + x^{27} + x^{26} + x^{25} + x^{24} + x^{23} + x^{22} + x^{21} + x^{20} + x^{19}\\
&+ x^{18} + x^{17} + x^{16} + x^{15} + x^{12} + x^{6} + x^{5} + x^{3} + 1,
\end{aligned}
$$

and the initial terms are [0, 1, 0, 0, 0, 1, 0, 0, 1, 0, 0, 1, 1, 0, 0, 1].

For $\phi(M^e, 1, 1)$:

$$\begin{aligned}
p_0(x) &= x^{132} + x^{122} + x^{112} + x^{102} + x^{96} + x^{76} + x^{60} + x^{50} + x^{24},\\
p_3(x) &= x^{126} + x^{112} + x^{110} + x^{108} + x^{102} + x^{100} + x^{92} + x^{90} + x^{88} + x^{84}\\
&\quad + x^{82} + x^{80} + x^{78} + x^{76} + x^{74} + x^{68} + x^{64} + x^{62} + x^{54} + x^{50} + x^{44}\\
&\quad + x^{36} + x^{30} + x^{20} + x^{18} + x^{16} + x^{12} + x^{10} + x^{8} + x^{6},\\
p_6(x) &= x^{126} + x^{124} + x^{120} + x^{118} + x^{110} + x^{104} + x^{102} + x^{100} + x^{98} + x^{94}\\
&\quad + x^{88} + x^{82} + x^{80} + x^{76} + x^{74} + x^{72} + x^{66} + x^{62} + x^{58} + x^{54} + x^{52}\\
&\quad + x^{50} + x^{48} + x^{46} + x^{44} + x^{42} + x^{34} + x^{30} + x^{22} + x^{20} + x^{16} + x^{10}\\
&\quad + x^{2} + 1,\\
p_9(x) &= x^{124} + x^{120} + x^{116} + x^{110} + x^{106} + x^{104} + x^{98} + x^{94} + x^{92} + x^{90}\\
&\quad + x^{88} + x^{86} + x^{84} + x^{82} + x^{80} + x^{78} + x^{76} + x^{74} + x^{70} + x^{68} + x^{66}\\
&\quad + x^{58} + x^{56} + x^{52} + x^{50} + x^{40} + x^{38} + x^{30} + x^{28} + x^{26} + x^{22} + x^{18}\\
&\quad + x^{16} + x^{6} + x^{4} + x^{2},\\
p_{12}(x) &= x^{124} + x^{122} + x^{118} + x^{112} + x^{108} + x^{106} + x^{102} + x^{96} + x^{92} + x^{90}\\
&\quad + x^{86} + x^{80} + x^{76} + x^{74} + x^{70} + x^{64} + x^{60} + x^{58} + x^{54} + x^{48} + x^{28}\\
&\quad + x^{26} + x^{22} + x^{16} + x^{12} + x^{10} + x^{6} + 1,
\end{aligned}$$

and the initial terms are [0, 0, 1, 0, 0, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0].

For $\phi(W^e, 0, 0)$:

$$\begin{aligned}
p_0(x) &= x^{132} + x^{128} + x^{126} + x^{124} + x^{118} + x^{116} + x^{110} + x^{106} + x^{102} + x^{94}\\
&\quad + x^{90} + x^{86} + x^{84} + x^{82} + x^{80} + x^{78} + x^{74} + x^{72} + x^{70} + x^{68} + x^{66}\\
&\quad + x^{64} + x^{62} + x^{60} + x^{54} + x^{50} + x^{42} + x^{36} + x^{32} + x^{30} + x^{28} + x^{26}\\
&\quad + x^{22} + x^{20} + x^{18} + x^{16} + x^{12},\\
p_3(x) &= x^{126} + x^{122} + x^{118} + x^{116} + x^{114} + x^{110} + x^{106} + x^{104} + x^{102} + x^{100}\\
&\quad + x^{96} + x^{90} + x^{88} + x^{86} + x^{82} + x^{80} + x^{78} + x^{76} + x^{74} + x^{72} + x^{68}\\
&\quad + x^{64} + x^{62} + x^{60} + x^{46} + x^{40} + x^{36} + x^{34} + x^{32} + x^{30} + x^{16} + x^{14}\\
&\quad + x^{10} + x^{8},\\
p_6(x) &= x^{126} + x^{124} + x^{122} + x^{118} + x^{114} + x^{110} + x^{108} + x^{106} + x^{104} + x^{100}\\
&\quad + x^{96} + x^{94} + x^{92} + x^{90} + x^{88} + x^{80} + x^{76} + x^{70} + x^{66} + x^{60} + x^{46}\\
&\quad + x^{44} + x^{42} + x^{40} + x^{38} + x^{34} + x^{6} + x^{4} + x^{2} + 1,\\
p_9(x) &= x^{124} + x^{120} + x^{116} + x^{110} + x^{106} + x^{104} + x^{98} + x^{94} + x^{92} + x^{90}\\
&\quad + x^{88} + x^{86} + x^{84} + x^{82} + x^{80} + x^{78} + x^{76} + x^{74} + x^{70} + x^{68} + x^{66}\\
&\quad + x^{58} + x^{56} + x^{52} + x^{50} + x^{40} + x^{38} + x^{30} + x^{28} + x^{26} + x^{22} + x^{18}\\
&\quad + x^{16} + x^{6} + x^{4} + x^{2},\\
p_{12}(x) &= x^{124} + x^{122} + x^{118} + x^{112} + x^{108} + x^{106} + x^{102} + x^{96} + x^{92} + x^{90}
\end{aligned}$$

$$+ x^{86} + x^{80} + x^{76} + x^{74} + x^{70} + x^{64} + x^{60} + x^{58} + x^{54} + x^{48} + x^{28} + x^{26} + x^{22} + x^{16} + x^{12} + x^{10} + x^{6} + 1,$$

and the initial terms are [1, 0, 1, 0, 1, 0, 1, 0, 0, 0, 0, 0, 0, 0, 1, 0].

For $\phi(W^e, 0, 1)$:

$$\begin{aligned}
p_0(x) = {} & x^{147} + x^{144} + x^{142} + x^{138} + x^{137} + x^{135} + x^{134} + x^{133} + x^{130} + x^{129} \\
& + x^{127} + x^{124} + x^{122} + x^{120} + x^{117} + x^{115} + x^{112} + x^{111} + x^{110} \\
& + x^{109} + x^{108} + x^{105} + x^{104} + x^{102} + x^{100} + x^{99} + x^{98} + x^{97} + x^{96} \\
& + x^{92} + x^{91} + x^{90} + x^{85} + x^{84} + x^{83} + x^{81} + x^{78} + x^{76} + x^{74} + x^{72} \\
& + x^{71} + x^{70} + x^{68} + x^{67} + x^{63} + x^{62} + x^{61} + x^{59} + x^{53} + x^{45} + x^{44} \\
& + x^{41} + x^{39} + x^{38} + x^{34} + x^{33} + x^{32} + x^{31} + x^{27}, \\
p_3(x) = {} & x^{145} + x^{142} + x^{136} + x^{131} + x^{130} + x^{128} + x^{127} + x^{123} + x^{122} + x^{120} \\
& + x^{116} + x^{114} + x^{110} + x^{108} + x^{107} + x^{105} + x^{103} + x^{100} + x^{99} + x^{97} \\
& + x^{96} + x^{91} + x^{90} + x^{88} + x^{87} + x^{83} + x^{82} + x^{81} + x^{80} + x^{78} + x^{76} \\
& + x^{74} + x^{73} + x^{72} + x^{68} + x^{66} + x^{62} + x^{60} + x^{59} + x^{55} + x^{54} + x^{52} \\
& + x^{51} + x^{46} + x^{40} + x^{35} + x^{34} + x^{33} + x^{32} + x^{31} + x^{30} + x^{27} + x^{26} \\
& + x^{25} + x^{22} + x^{20} + x^{19} + x^{15} + x^{14} + x^{12} + x^{11} + x^{9}, \\
p_6(x) = {} & x^{144} + x^{143} + x^{142} + x^{140} + x^{134} + x^{133} + x^{131} + x^{130} + x^{129} + x^{128} \\
& + x^{127} + x^{124} + x^{122} + x^{121} + x^{119} + x^{118} + x^{117} + x^{113} + x^{112} \\
& + x^{109} + x^{108} + x^{106} + x^{100} + x^{99} + x^{97} + x^{96} + x^{95} + x^{91} + x^{89} \\
& + x^{86} + x^{84} + x^{83} + x^{81} + x^{78} + x^{76} + x^{75} + x^{73} + x^{72} + x^{71} + x^{70} \\
& + x^{69} + x^{68} + x^{67} + x^{64} + x^{62} + x^{61} + x^{59} + x^{56} + x^{52} + x^{51} + x^{50} \\
& + x^{47} + x^{45} + x^{41} + x^{39} + x^{36} + x^{34} + x^{33} + x^{31} + x^{27} + x^{25} + x^{24} \\
& + x^{23} + x^{22} + x^{21} + x^{17} + x^{15} + x^{14} + x^{13} + x^{12} + x^{11} + x^{10} + x^{9} \\
& + x^{6}, \\
p_9(x) = {} & x^{143} + x^{141} + x^{140} + x^{139} + x^{138} + x^{137} + x^{136} + x^{133} + x^{132} + x^{131} \\
& + x^{129} + x^{128} + x^{122} + x^{121} + x^{118} + x^{117} + x^{116} + x^{114} + x^{113} \\
& + x^{112} + x^{111} + x^{109} + x^{107} + x^{104} + x^{103} + x^{101} + x^{100} + x^{97} + x^{91} \\
& + x^{89} + x^{88} + x^{86} + x^{82} + x^{80} + x^{77} + x^{76} + x^{75} + x^{73} + x^{72} + x^{67} \\
& + x^{66} + x^{64} + x^{63} + x^{61} + x^{57} + x^{55} + x^{54} + x^{53} + x^{52} + x^{50} + x^{48} \\
& + x^{46} + x^{44} + x^{43} + x^{42} + x^{41} + x^{39} + x^{31} + x^{28} + x^{25} + x^{23} + x^{20} \\
& + x^{15} + x^{14} + x^{13} + x^{12} + x^{10} + x^{8} + x^{7} + x^{6} + x^{5} + x^{3}, \\
p_{12}(x) = {} & x^{142} + x^{141} + x^{139} + x^{138} + x^{137} + x^{136} + x^{135} + x^{132} + x^{130} + x^{129} \\
& + x^{127} + x^{126} + x^{125} + x^{124} + x^{123} + x^{122} + x^{121} + x^{120} + x^{119} \\
& + x^{118} + x^{117} + x^{116} + x^{115} + x^{114} + x^{113} + x^{112} + x^{111} + x^{110} \\
& + x^{109} + x^{108} + x^{107} + x^{106} + x^{105} + x^{104} + x^{103} + x^{102} + x^{101}
\end{aligned}$$

$$
\begin{aligned}
&+ x^{100} + x^{99} + x^{98} + x^{97} + x^{96} + x^{95} + x^{94} + x^{93} + x^{92} + x^{91} + x^{90} \\
&+ x^{89} + x^{88} + x^{87} + x^{86} + x^{85} + x^{84} + x^{83} + x^{82} + x^{81} + x^{80} + x^{79} \\
&+ x^{78} + x^{77} + x^{76} + x^{75} + x^{74} + x^{73} + x^{72} + x^{71} + x^{70} + x^{69} + x^{68} \\
&+ x^{67} + x^{66} + x^{65} + x^{64} + x^{63} + x^{60} + x^{54} + x^{53} + x^{51} + x^{48} + x^{46} \\
&+ x^{45} + x^{43} + x^{42} + x^{41} + x^{40} + x^{39} + x^{36} + x^{34} + x^{33} + x^{31} + x^{30} \\
&+ x^{29} + x^{28} + x^{27} + x^{26} + x^{25} + x^{24} + x^{23} + x^{22} + x^{21} + x^{20} + x^{19} \\
&+ x^{18} + x^{17} + x^{16} + x^{15} + x^{12} + x^{6} + x^{5} + x^{3} + 1,
\end{aligned}
$$

and the initial terms are [0, 0, 0, 0, 0, 0, 1, 0, 1, 1, 1, 0, 1, 1, 0, 1].

For $\phi(W^e, 1, 0)$:

$$
\begin{aligned}
p_0(x) &= x^{147} + x^{144} + x^{142} + x^{138} + x^{137} + x^{135} + x^{134} + x^{133} + x^{130} + x^{129} \\
&\quad + x^{127} + x^{124} + x^{122} + x^{120} + x^{117} + x^{115} + x^{112} + x^{111} + x^{110} \\
&\quad + x^{109} + x^{108} + x^{105} + x^{104} + x^{102} + x^{100} + x^{99} + x^{98} + x^{97} + x^{96} \\
&\quad + x^{92} + x^{91} + x^{90} + x^{85} + x^{84} + x^{83} + x^{81} + x^{78} + x^{76} + x^{74} + x^{72} \\
&\quad + x^{71} + x^{70} + x^{68} + x^{67} + x^{63} + x^{62} + x^{61} + x^{59} + x^{53} + x^{45} + x^{44} \\
&\quad + x^{41} + x^{39} + x^{38} + x^{34} + x^{33} + x^{32} + x^{31} + x^{27}, \\
p_3(x) &= x^{145} + x^{142} + x^{136} + x^{131} + x^{130} + x^{128} + x^{127} + x^{123} + x^{122} + x^{120} \\
&\quad + x^{116} + x^{114} + x^{110} + x^{108} + x^{107} + x^{105} + x^{103} + x^{100} + x^{99} + x^{97} \\
&\quad + x^{96} + x^{91} + x^{90} + x^{88} + x^{87} + x^{83} + x^{82} + x^{81} + x^{80} + x^{78} + x^{76} \\
&\quad + x^{74} + x^{73} + x^{72} + x^{68} + x^{66} + x^{62} + x^{60} + x^{59} + x^{55} + x^{54} + x^{52} \\
&\quad + x^{51} + x^{46} + x^{40} + x^{35} + x^{34} + x^{33} + x^{32} + x^{31} + x^{30} + x^{27} + x^{26} \\
&\quad + x^{25} + x^{22} + x^{20} + x^{19} + x^{15} + x^{14} + x^{12} + x^{11} + x^{9}, \\
p_6(x) &= x^{144} + x^{143} + x^{142} + x^{140} + x^{134} + x^{133} + x^{131} + x^{130} + x^{129} + x^{128} \\
&\quad + x^{127} + x^{124} + x^{122} + x^{121} + x^{119} + x^{118} + x^{117} + x^{113} + x^{112} \\
&\quad + x^{109} + x^{108} + x^{106} + x^{100} + x^{99} + x^{97} + x^{96} + x^{95} + x^{91} + x^{89} \\
&\quad + x^{86} + x^{84} + x^{83} + x^{81} + x^{78} + x^{76} + x^{75} + x^{73} + x^{72} + x^{71} + x^{70} \\
&\quad + x^{69} + x^{68} + x^{67} + x^{64} + x^{62} + x^{61} + x^{59} + x^{56} + x^{52} + x^{51} + x^{50} \\
&\quad + x^{47} + x^{45} + x^{41} + x^{39} + x^{36} + x^{34} + x^{33} + x^{31} + x^{27} + x^{25} + x^{24} \\
&\quad + x^{23} + x^{22} + x^{21} + x^{17} + x^{15} + x^{14} + x^{13} + x^{12} + x^{11} + x^{10} + x^{9} \\
&\quad + x^{6}, \\
p_9(x) &= x^{143} + x^{141} + x^{140} + x^{139} + x^{138} + x^{137} + x^{136} + x^{133} + x^{132} + x^{131} \\
&\quad + x^{129} + x^{128} + x^{122} + x^{121} + x^{118} + x^{117} + x^{116} + x^{114} + x^{113} \\
&\quad + x^{112} + x^{111} + x^{109} + x^{107} + x^{104} + x^{103} + x^{101} + x^{100} + x^{97} + x^{91} \\
&\quad + x^{89} + x^{88} + x^{86} + x^{82} + x^{80} + x^{77} + x^{76} + x^{75} + x^{73} + x^{72} + x^{67} \\
&\quad + x^{66} + x^{64} + x^{63} + x^{61} + x^{57} + x^{55} + x^{54} + x^{53} + x^{52} + x^{50} + x^{48} \\
&\quad + x^{46} + x^{44} + x^{43} + x^{42} + x^{41} + x^{39} + x^{31} + x^{28} + x^{25} + x^{23} + x^{20}
\end{aligned}
$$

$$
\begin{aligned}
&+ x^{15} + x^{14} + x^{13} + x^{12} + x^{10} + x^{8} + x^{7} + x^{6} + x^{5} + x^{3},\\
p_{12}(x) &= x^{142} + x^{141} + x^{139} + x^{138} + x^{137} + x^{136} + x^{135} + x^{132} + x^{130} + x^{129}\\
&+ x^{127} + x^{126} + x^{125} + x^{124} + x^{123} + x^{122} + x^{121} + x^{120} + x^{119}\\
&+ x^{118} + x^{117} + x^{116} + x^{115} + x^{114} + x^{113} + x^{112} + x^{111} + x^{110}\\
&+ x^{109} + x^{108} + x^{107} + x^{106} + x^{105} + x^{104} + x^{103} + x^{102} + x^{101}\\
&+ x^{100} + x^{99} + x^{98} + x^{97} + x^{96} + x^{95} + x^{94} + x^{93} + x^{92} + x^{91} + x^{90}\\
&+ x^{89} + x^{88} + x^{87} + x^{86} + x^{85} + x^{84} + x^{83} + x^{82} + x^{81} + x^{80} + x^{79}\\
&+ x^{78} + x^{77} + x^{76} + x^{75} + x^{74} + x^{73} + x^{72} + x^{71} + x^{70} + x^{69} + x^{68}\\
&+ x^{67} + x^{66} + x^{65} + x^{64} + x^{63} + x^{60} + x^{54} + x^{53} + x^{51} + x^{48} + x^{46}\\
&+ x^{45} + x^{43} + x^{42} + x^{41} + x^{40} + x^{39} + x^{36} + x^{34} + x^{33} + x^{31} + x^{30}\\
&+ x^{29} + x^{28} + x^{27} + x^{26} + x^{25} + x^{24} + x^{23} + x^{22} + x^{21} + x^{20} + x^{19}\\
&+ x^{18} + x^{17} + x^{16} + x^{15} + x^{12} + x^{6} + x^{5} + x^{3} + 1,
\end{aligned}
$$

and the initial terms are [0, 0, 0, 0, 0, 0, 1, 0, 1, 1, 1, 0, 1, 1, 0, 1].

For $\phi(W^e, 1, 1)$:

$$
\begin{aligned}
p_0(x) &= x^{162} + x^{158} + x^{150} + x^{148} + x^{138} + x^{130} + x^{128} + x^{126} + x^{124} + x^{118}\\
&+ x^{108} + x^{106} + x^{104} + x^{102} + x^{96} + x^{88} + x^{86} + x^{84} + x^{80} + x^{76}\\
&+ x^{72} + x^{70} + x^{62} + x^{58} + x^{56} + x^{50} + x^{48} + x^{46} + x^{42},\\
p_3(x) &= x^{156} + x^{148} + x^{142} + x^{138} + x^{136} + x^{134} + x^{128} + x^{126} + x^{124} + x^{116}\\
&+ x^{110} + x^{108} + x^{106} + x^{100} + x^{88} + x^{86} + x^{84} + x^{78} + x^{76} + x^{74}\\
&+ x^{70} + x^{68} + x^{66} + x^{64} + x^{62} + x^{56} + x^{54} + x^{52} + x^{44} + x^{38} + x^{36}\\
&+ x^{34} + x^{32} + x^{28} + x^{26} + x^{20} + x^{16} + x^{14} + x^{8} + x^{6},\\
p_6(x) &= x^{158} + x^{156} + x^{146} + x^{138} + x^{136} + x^{134} + x^{130} + x^{126} + x^{124} + x^{122}\\
&+ x^{116} + x^{114} + x^{108} + x^{106} + x^{100} + x^{96} + x^{94} + x^{88} + x^{86} + x^{72}\\
&+ x^{66} + x^{64} + x^{58} + x^{50} + x^{46} + x^{42} + x^{38} + x^{36} + x^{24} + x^{20} + x^{16}\\
&+ x^{12} + x^{10} + x^{6} + x^{2} + 1,\\
p_9(x) &= x^{160} + x^{158} + x^{154} + x^{148} + x^{146} + x^{142} + x^{140} + x^{136} + x^{134} + x^{132}\\
&+ x^{126} + x^{124} + x^{122} + x^{120} + x^{118} + x^{116} + x^{114} + x^{110} + x^{108}\\
&+ x^{106} + x^{104} + x^{98} + x^{94} + x^{90} + x^{86} + x^{84} + x^{78} + x^{76} + x^{72} + x^{68}\\
&+ x^{60} + x^{56} + x^{54} + x^{52} + x^{46} + x^{42} + x^{38} + x^{34} + x^{32} + x^{28} + x^{20}\\
&+ x^{18} + x^{14} + x^{10} + x^{8} + x^{6} + x^{4} + x^{2},\\
p_{12}(x) &= x^{160} + x^{152} + x^{144} + x^{128} + x^{80} + x^{72} + x^{56} + x^{24} + x^{16} + 1,
\end{aligned}
$$

and the initial terms are [0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 0, 1, 0].

For $\phi(M^o, 0, 0)$:

$$
\begin{aligned}
p_0(x) &= x^{147} + x^{146} + x^{145} + x^{143} + x^{142} + x^{140} + x^{139} + x^{138} + x^{134} + x^{130}\\
&+ x^{128} + x^{126} + x^{121} + x^{117} + x^{116} + x^{115} + x^{111} + x^{110} + x^{109}
\end{aligned}
$$

$$
\begin{aligned}
&+ x^{108} + x^{107} + x^{104} + x^{103} + x^{101} + x^{97} + x^{95} + x^{94} + x^{93} + x^{92}\\
&+ x^{90} + x^{89} + x^{88} + x^{87} + x^{86} + x^{82} + x^{80} + x^{79} + x^{78} + x^{75} + x^{73}\\
&+ x^{71} + x^{70} + x^{68} + x^{62} + x^{61} + x^{58} + x^{54} + x^{53} + x^{52} + x^{51} + x^{50}\\
&+ x^{49} + x^{48} + x^{46} + x^{45} + x^{44} + x^{41} + x^{39} + x^{38} + x^{37} + x^{35} + x^{34}\\
&+ x^{33} + x^{31} + x^{30} + x^{29} + x^{28} + x^{27} + x^{26} + x^{24} + x^{21} + x^{20} + x^{19}\\
&+ x^{16} + x^{15} + x^{14} + x^{12},\\
p_3(x) = {}& x^{146} + x^{144} + x^{141} + x^{136} + x^{133} + x^{132} + x^{130} + x^{128} + x^{126} + x^{122}\\
&+ x^{121} + x^{120} + x^{118} + x^{114} + x^{113} + x^{111} + x^{110} + x^{109} + x^{108}\\
&+ x^{105} + x^{104} + x^{103} + x^{101} + x^{100} + x^{99} + x^{98} + x^{93} + x^{92} + x^{90}\\
&+ x^{87} + x^{83} + x^{77} + x^{76} + x^{75} + x^{74} + x^{73} + x^{70} + x^{66} + x^{65} + x^{63}\\
&+ x^{62} + x^{61} + x^{59} + x^{57} + x^{53} + x^{52} + x^{51} + x^{50} + x^{48} + x^{47} + x^{46}\\
&+ x^{45} + x^{43} + x^{41} + x^{39} + x^{37} + x^{36} + x^{35} + x^{33} + x^{29} + x^{28} + x^{27}\\
&+ x^{26} + x^{25} + x^{21} + x^{20} + x^{19} + x^{18} + x^{15} + x^{14} + x^{12} + x^{11} + x^{10}\\
&+ x^{8},\\
p_6(x) = {}& x^{146} + x^{144} + x^{140} + x^{139} + x^{136} + x^{135} + x^{132} + x^{128} + x^{127} + x^{123}\\
&+ x^{121} + x^{120} + x^{119} + x^{116} + x^{115} + x^{112} + x^{110} + x^{109} + x^{108}\\
&+ x^{104} + x^{103} + x^{101} + x^{99} + x^{98} + x^{96} + x^{95} + x^{94} + x^{91} + x^{90} + x^{88}\\
&+ x^{86} + x^{82} + x^{80} + x^{78} + x^{75} + x^{66} + x^{65} + x^{63} + x^{59} + x^{58} + x^{56}\\
&+ x^{55} + x^{53} + x^{51} + x^{50} + x^{49} + x^{47} + x^{45} + x^{43} + x^{38} + x^{37} + x^{35}\\
&+ x^{33} + x^{32} + x^{31} + x^{29} + x^{28} + x^{27} + x^{26} + x^{25} + x^{24} + x^{21} + x^{15}\\
&+ x^{7} + x^{5} + x^{4} + x^{3} + 1,\\
p_9(x) = {}& x^{146} + x^{145} + x^{143} + x^{140} + x^{134} + x^{133} + x^{131} + x^{130} + x^{129} + x^{128}\\
&+ x^{127} + x^{124} + x^{122} + x^{121} + x^{119} + x^{118} + x^{117} + x^{116} + x^{115}\\
&+ x^{114} + x^{113} + x^{112} + x^{111} + x^{108} + x^{106} + x^{105} + x^{103} + x^{102}\\
&+ x^{101} + x^{100} + x^{99} + x^{98} + x^{97} + x^{96} + x^{95} + x^{92} + x^{90} + x^{89} + x^{87}\\
&+ x^{86} + x^{85} + x^{84} + x^{83} + x^{82} + x^{81} + x^{80} + x^{79} + x^{76} + x^{74} + x^{73}\\
&+ x^{71} + x^{70} + x^{69} + x^{68} + x^{67} + x^{64} + x^{58} + x^{57} + x^{55} + x^{52} + x^{50}\\
&+ x^{49} + x^{47} + x^{44} + x^{38} + x^{37} + x^{35} + x^{34} + x^{33} + x^{32} + x^{31} + x^{28}\\
&+ x^{26} + x^{25} + x^{23} + x^{22} + x^{21} + x^{20} + x^{19} + x^{16} + x^{10} + x^{9} + x^{7} + x^{4},\\
p_{12}(x) = {}& x^{146} + x^{145} + x^{143} + x^{142} + x^{141} + x^{140} + x^{139} + x^{138} + x^{137} + x^{136}\\
&+ x^{135} + x^{134} + x^{133} + x^{132} + x^{131} + x^{128} + x^{126} + x^{125} + x^{123}\\
&+ x^{120} + x^{110} + x^{109} + x^{107} + x^{104} + x^{94} + x^{93} + x^{91} + x^{88} + x^{78}\\
&+ x^{77} + x^{75} + x^{72} + x^{66} + x^{65} + x^{63} + x^{60} + x^{58} + x^{57} + x^{55} + x^{54}\\
&+ x^{53} + x^{52} + x^{51} + x^{50} + x^{49} + x^{48} + x^{47} + x^{46} + x^{45} + x^{44} + x^{43}\\
&+ x^{42} + x^{41} + x^{40} + x^{39} + x^{38} + x^{37} + x^{36} + x^{35} + x^{32} + x^{30} + x^{29}
\end{aligned}
$$

$$+ x^{27} + x^{24} + x^{18} + x^{17} + x^{15} + x^{12} + x^{10} + x^{9} + x^{7} + x^{6} + x^{5} + x^{4} + x^{3} + 1,$$

and the initial terms are [1, 0, 1, 0, 0, 0, 0, 1, 1, 1, 0, 0, 1, 0, 0, 1].

For $\phi(M^o, 0, 1)$:

$$\begin{aligned}
p_0(x) &= x^{144} + x^{141} + x^{137} + x^{136} + x^{133} + x^{129} + x^{126} + x^{125} + x^{124} + x^{121} \\
&\quad + x^{119} + x^{118} + x^{117} + x^{114} + x^{112} + x^{107} + x^{102} + x^{100} + x^{98} + x^{94} \\
&\quad + x^{92} + x^{91} + x^{86} + x^{85} + x^{84} + x^{83} + x^{81} + x^{80} + x^{79} + x^{78} + x^{76} \\
&\quad + x^{74} + x^{73} + x^{64} + x^{59} + x^{56} + x^{53} + x^{49} + x^{46} + x^{43} + x^{40} + x^{35} \\
&\quad + x^{34} + x^{33} + x^{32} + x^{31} + x^{30} + x^{29} + x^{28} + x^{25} + x^{24} + x^{23} + x^{22} \\
&\quad + x^{21} + x^{20} + x^{18}, \\
p_3(x) &= x^{137} + x^{136} + x^{135} + x^{134} + x^{133} + x^{131} + x^{126} + x^{121} + x^{113} + x^{112} \\
&\quad + x^{111} + x^{110} + x^{109} + x^{107} + x^{102} + x^{96} + x^{95} + x^{94} + x^{93} + x^{91} \\
&\quad + x^{86} + x^{81} + x^{65} + x^{64} + x^{63} + x^{62} + x^{61} + x^{59} + x^{54} + x^{49} + x^{41} \\
&\quad + x^{40} + x^{39} + x^{38} + x^{37} + x^{35} + x^{30} + x^{24} + x^{23} + x^{22} + x^{21} + x^{19} \\
&\quad + x^{14} + x^{9}, \\
p_6(x) &= x^{138} + x^{136} + x^{134} + x^{132} + x^{130} + x^{126} + x^{122} + x^{120} + x^{118} + x^{114} \\
&\quad + x^{108} + x^{106} + x^{94} + x^{90} + x^{88} + x^{84} + x^{82} + x^{80} + x^{76} + x^{74} + x^{72} \\
&\quad + x^{68} + x^{64} + x^{56} + x^{46} + x^{44} + x^{40} + x^{38} + x^{34} + x^{32} + x^{30} + x^{26} \\
&\quad + x^{24} + x^{20} + x^{16} + x^{14} + x^{10} + x^{6}, \\
p_9(x) &= x^{139} + x^{138} + x^{135} + x^{129} + x^{127} + x^{122} + x^{120} + x^{119} + x^{115} + x^{113} \\
&\quad + x^{111} + x^{106} + x^{104} + x^{103} + x^{99} + x^{97} + x^{95} + x^{90} + x^{88} + x^{87} \\
&\quad + x^{83} + x^{81} + x^{79} + x^{74} + x^{72} + x^{71} + x^{67} + x^{65} + x^{63} + x^{59} + x^{56} \\
&\quad + x^{51} + x^{43} + x^{42} + x^{39} + x^{33} + x^{31} + x^{26} + x^{24} + x^{23} + x^{19} + x^{17} \\
&\quad + x^{15} + x^{11} + x^{8} + x^{3}, \\
p_{12}(x) &= x^{140} + x^{136} + x^{132} + x^{128} + x^{120} + x^{104} + x^{88} + x^{72} + x^{60} + x^{52} \\
&\quad + x^{48} + x^{44} + x^{40} + x^{36} + x^{32} + x^{24} + x^{12} + x^{4} + 1,
\end{aligned}$$

and the initial terms are [0, 1, 0, 1, 0, 0, 0, 0, 0, 1, 0, 1, 0, 1, 0, 1].

For $\phi(M^o, 1, 0)$:

$$\begin{aligned}
p_0(x) &= x^{162} + x^{161} + x^{160} + x^{159} + x^{158} + x^{156} + x^{155} + x^{154} + x^{153} + x^{152} \\
&\quad + x^{151} + x^{150} + x^{149} + x^{147} + x^{146} + x^{145} + x^{144} + x^{142} + x^{140} \\
&\quad + x^{139} + x^{138} + x^{135} + x^{133} + x^{132} + x^{131} + x^{130} + x^{128} + x^{127} \\
&\quad + x^{126} + x^{125} + x^{124} + x^{123} + x^{122} + x^{121} + x^{119} + x^{118} + x^{117} \\
&\quad + x^{116} + x^{113} + x^{112} + x^{110} + x^{109} + x^{108} + x^{107} + x^{104} + x^{103} \\
&\quad + x^{101} + x^{98} + x^{97} + x^{94} + x^{89} + x^{87} + x^{83} + x^{81} + x^{80} + x^{79} + x^{77} \\
&\quad + x^{76} + x^{75} + x^{73} + x^{72} + x^{70} + x^{69} + x^{68} + x^{67} + x^{64} + x^{62} + x^{59}
\end{aligned}$$

$$
\begin{aligned}
&+ x^{58} + x^{57} + x^{56} + x^{55} + x^{54} + x^{53} + x^{52} + x^{49} + x^{48} + x^{47} + x^{46}\\
&+ x^{45} + x^{44} + x^{42} + x^{41} + x^{40} + x^{39} + x^{37} + x^{35} + x^{34} + x^{32} + x^{31}\\
&+ x^{30} + x^{29} + x^{27},\\
p_3(x) = {}& x^{161} + x^{160} + x^{159} + x^{158} + x^{156} + x^{154} + x^{153} + x^{151} + x^{150} + x^{149}\\
&+ x^{148} + x^{147} + x^{143} + x^{141} + x^{138} + x^{132} + x^{131} + x^{130} + x^{129}\\
&+ x^{127} + x^{125} + x^{124} + x^{123} + x^{120} + x^{118} + x^{117} + x^{116} + x^{112}\\
&+ x^{109} + x^{108} + x^{103} + x^{102} + x^{101} + x^{98} + x^{96} + x^{95} + x^{94} + x^{91}\\
&+ x^{89} + x^{88} + x^{87} + x^{84} + x^{82} + x^{79} + x^{78} + x^{77} + x^{76} + x^{75} + x^{71}\\
&+ x^{69} + x^{66} + x^{60} + x^{59} + x^{58} + x^{57} + x^{55} + x^{53} + x^{52} + x^{51} + x^{48}\\
&+ x^{46} + x^{45} + x^{44} + x^{40} + x^{37} + x^{36} + x^{31} + x^{30} + x^{29} + x^{26} + x^{24}\\
&+ x^{23} + x^{22} + x^{19} + x^{14} + x^{9},\\
p_6(x) = {}& x^{162} + x^{160} + x^{152} + x^{150} + x^{148} + x^{146} + x^{142} + x^{140} + x^{136} + x^{134}\\
&+ x^{132} + x^{130} + x^{128} + x^{126} + x^{122} + x^{118} + x^{114} + x^{112} + x^{110}\\
&+ x^{108} + x^{106} + x^{100} + x^{98} + x^{96} + x^{94} + x^{92} + x^{90} + x^{86} + x^{84} + x^{82}\\
&+ x^{80} + x^{76} + x^{74} + x^{72} + x^{70} + x^{68} + x^{66} + x^{64} + x^{62} + x^{60} + x^{58}\\
&+ x^{56} + x^{50} + x^{48} + x^{46} + x^{42} + x^{40} + x^{38} + x^{34} + x^{30} + x^{28} + x^{26}\\
&+ x^{24} + x^{22} + x^{20} + x^{18} + x^{16} + x^{14} + x^{10} + x^{6},\\
p_9(x) = {}& x^{163} + x^{162} + x^{158} + x^{155} + x^{153} + x^{150} + x^{149} + x^{146} + x^{144} + x^{143}\\
&+ x^{142} + x^{141} + x^{140} + x^{138} + x^{137} + x^{135} + x^{134} + x^{133} + x^{132}\\
&+ x^{130} + x^{129} + x^{128} + x^{127} + x^{126} + x^{125} + x^{124} + x^{123} + x^{122}\\
&+ x^{121} + x^{120} + x^{119} + x^{118} + x^{117} + x^{116} + x^{115} + x^{114} + x^{113}\\
&+ x^{112} + x^{111} + x^{110} + x^{109} + x^{108} + x^{107} + x^{106} + x^{105} + x^{104}\\
&+ x^{103} + x^{102} + x^{101} + x^{100} + x^{99} + x^{98} + x^{97} + x^{96} + x^{95} + x^{94}\\
&+ x^{93} + x^{92} + x^{91} + x^{90} + x^{89} + x^{88} + x^{87} + x^{86} + x^{85} + x^{84} + x^{81}\\
&+ x^{80} + x^{79} + x^{77} + x^{76} + x^{74} + x^{72} + x^{71} + x^{68} + x^{66} + x^{65} + x^{62}\\
&+ x^{57} + x^{56} + x^{54} + x^{53} + x^{51} + x^{50} + x^{48} + x^{47} + x^{46} + x^{45} + x^{44}\\
&+ x^{42} + x^{41} + x^{39} + x^{38} + x^{37} + x^{36} + x^{35} + x^{33} + x^{32} + x^{31} + x^{29}\\
&+ x^{28} + x^{26} + x^{24} + x^{23} + x^{20} + x^{19} + x^{17} + x^{11} + x^{8} + x^{3},\\
p_{12}(x) = {}& x^{164} + x^{152} + x^{140} + x^{136} + x^{124} + x^{120} + x^{116} + x^{112} + x^{108} + x^{104}\\
&+ x^{100} + x^{96} + x^{92} + x^{88} + x^{80} + x^{76} + x^{64} + x^{56} + x^{52} + x^{48} + x^{44}\\
&+ x^{40} + x^{36} + x^{28} + x^{20} + x^{16} + x^{4} + 1,
\end{aligned}
$$

and the initial terms are [0, 0, 0, 0, 0, 0, 1, 0, 1, 1, 0, 0, 0, 1, 1, 0].
For $\phi(M^o, 1, 1)$:

$$
\begin{aligned}
p_0(x) = {}& x^{147} + x^{145} + x^{142} + x^{141} + x^{137} + x^{136} + x^{135} + x^{132} + x^{128} + x^{127}\\
&+ x^{124} + x^{122} + x^{121} + x^{119} + x^{117} + x^{116} + x^{115} + x^{114} + x^{112}
\end{aligned}
$$

$$
\begin{aligned}
&+ x^{107} + x^{105} + x^{103} + x^{98} + x^{97} + x^{96} + x^{95} + x^{94} + x^{93} + x^{92} + x^{90} \\
&+ x^{87} + x^{86} + x^{84} + x^{80} + x^{78} + x^{76} + x^{72} + x^{70} + x^{69} + x^{66} + x^{65} \\
&+ x^{64} + x^{63} + x^{62} + x^{61} + x^{58} + x^{54} + x^{52} + x^{51} + x^{49} + x^{47} + x^{46} \\
&+ x^{43} + x^{41} + x^{40} + x^{37} + x^{36} + x^{35} + x^{33}, \\
p_3(x) = {}& x^{146} + x^{143} + x^{137} + x^{136} + x^{135} + x^{133} + x^{132} + x^{131} + x^{128} + x^{127} \\
&+ x^{123} + x^{121} + x^{120} + x^{119} + x^{118} + x^{117} + x^{114} + x^{110} + x^{109} \\
&+ x^{108} + x^{107} + x^{106} + x^{105} + x^{103} + x^{102} + x^{100} + x^{97} + x^{96} + x^{95} \\
&+ x^{93} + x^{92} + x^{91} + x^{86} + x^{82} + x^{80} + x^{77} + x^{76} + x^{75} + x^{74} + x^{73} \\
&+ x^{72} + x^{71} + x^{70} + x^{69} + x^{66} + x^{62} + x^{61} + x^{58} + x^{57} + x^{55} + x^{54} \\
&+ x^{53} + x^{52} + x^{48} + x^{46} + x^{43} + x^{37} + x^{36} + x^{34} + x^{33} + x^{32} + x^{30} \\
&+ x^{28} + x^{24} + x^{23} + x^{21} + x^{20} + x^{12}, \\
p_6(x) = {}& x^{146} + x^{143} + x^{141} + x^{135} + x^{132} + x^{130} + x^{129} + x^{128} + x^{124} + x^{123} \\
&+ x^{122} + x^{120} + x^{116} + x^{114} + x^{112} + x^{111} + x^{109} + x^{108} + x^{107} \\
&+ x^{105} + x^{102} + x^{99} + x^{96} + x^{95} + x^{94} + x^{92} + x^{90} + x^{89} + x^{88} + x^{86} \\
&+ x^{85} + x^{84} + x^{79} + x^{78} + x^{77} + x^{75} + x^{73} + x^{71} + x^{68} + x^{66} + x^{65} \\
&+ x^{63} + x^{59} + x^{58} + x^{56} + x^{55} + x^{54} + x^{52} + x^{51} + x^{49} + x^{48} + x^{46} \\
&+ x^{45} + x^{41} + x^{40} + x^{39} + x^{36} + x^{33} + x^{31} + x^{30} + x^{27} + x^{25} + x^{24} \\
&+ x^{22} + x^{20} + x^{18} + x^{15} + x^{8} + x^{6} + x^{5} + x^{3} + 1, \\
p_9(x) = {}& x^{146} + x^{145} + x^{143} + x^{140} + x^{134} + x^{133} + x^{131} + x^{130} + x^{129} + x^{128} \\
&+ x^{127} + x^{124} + x^{122} + x^{121} + x^{119} + x^{118} + x^{117} + x^{116} + x^{115} \\
&+ x^{114} + x^{113} + x^{112} + x^{111} + x^{108} + x^{106} + x^{105} + x^{103} + x^{102} \\
&+ x^{101} + x^{100} + x^{99} + x^{98} + x^{97} + x^{96} + x^{95} + x^{92} + x^{90} + x^{89} + x^{87} \\
&+ x^{86} + x^{85} + x^{84} + x^{83} + x^{82} + x^{81} + x^{80} + x^{79} + x^{76} + x^{74} + x^{73} \\
&+ x^{71} + x^{70} + x^{69} + x^{68} + x^{67} + x^{64} + x^{58} + x^{57} + x^{55} + x^{52} + x^{50} \\
&+ x^{49} + x^{47} + x^{44} + x^{38} + x^{37} + x^{35} + x^{34} + x^{33} + x^{32} + x^{31} + x^{28} \\
&+ x^{26} + x^{25} + x^{23} + x^{22} + x^{21} + x^{20} + x^{19} + x^{16} + x^{10} + x^{9} + x^{7} + x^{4}, \\
p_{12}(x) = {}& x^{146} + x^{145} + x^{143} + x^{142} + x^{141} + x^{140} + x^{139} + x^{138} + x^{137} + x^{136} \\
&+ x^{135} + x^{134} + x^{133} + x^{132} + x^{131} + x^{128} + x^{126} + x^{125} + x^{123} \\
&+ x^{120} + x^{110} + x^{109} + x^{107} + x^{104} + x^{94} + x^{93} + x^{91} + x^{88} + x^{78} \\
&+ x^{77} + x^{75} + x^{72} + x^{66} + x^{65} + x^{63} + x^{60} + x^{58} + x^{57} + x^{55} + x^{54} \\
&+ x^{53} + x^{52} + x^{51} + x^{50} + x^{49} + x^{48} + x^{47} + x^{46} + x^{45} + x^{44} + x^{43} \\
&+ x^{42} + x^{41} + x^{40} + x^{39} + x^{38} + x^{37} + x^{36} + x^{35} + x^{32} + x^{30} + x^{29} \\
&+ x^{27} + x^{24} + x^{18} + x^{17} + x^{15} + x^{12} + x^{10} + x^{9} + x^{7} + x^{6} + x^{5} + x^{4} \\
&+ x^{3} + 1,
\end{aligned}
$$

and the initial terms are [0, 0, 0, 0, 0, 0, 0, 1, 0, 1, 1, 0, 0, 0, 0, 1].

For $\phi(W^o,0,0)$:

$$
\begin{aligned}
p_0(x) = {} & x^{147}+x^{146}+x^{145}+x^{143}+x^{142}+x^{140}+x^{139}+x^{138}+x^{134}+x^{130}\\
&+x^{128}+x^{126}+x^{121}+x^{117}+x^{116}+x^{115}+x^{111}+x^{110}+x^{109}\\
&+x^{108}+x^{107}+x^{104}+x^{103}+x^{101}+x^{97}+x^{95}+x^{94}+x^{93}+x^{92}\\
&+x^{90}+x^{89}+x^{88}+x^{87}+x^{86}+x^{82}+x^{80}+x^{79}+x^{78}+x^{75}+x^{73}\\
&+x^{71}+x^{70}+x^{68}+x^{62}+x^{61}+x^{58}+x^{54}+x^{53}+x^{52}+x^{51}+x^{50}\\
&+x^{49}+x^{48}+x^{46}+x^{45}+x^{44}+x^{41}+x^{39}+x^{38}+x^{37}+x^{35}+x^{34}\\
&+x^{33}+x^{31}+x^{30}+x^{29}+x^{28}+x^{27}+x^{26}+x^{24}+x^{21}+x^{20}+x^{19}\\
&+x^{16}+x^{15}+x^{14}+x^{12},\\
p_3(x) = {} & x^{146}+x^{144}+x^{141}+x^{136}+x^{133}+x^{132}+x^{130}+x^{128}+x^{126}+x^{122}\\
&+x^{121}+x^{120}+x^{118}+x^{114}+x^{113}+x^{111}+x^{110}+x^{109}+x^{108}\\
&+x^{105}+x^{104}+x^{103}+x^{101}+x^{100}+x^{99}+x^{98}+x^{93}+x^{92}+x^{90}\\
&+x^{87}+x^{83}+x^{77}+x^{76}+x^{75}+x^{74}+x^{73}+x^{70}+x^{66}+x^{65}+x^{63}\\
&+x^{62}+x^{61}+x^{59}+x^{57}+x^{53}+x^{52}+x^{51}+x^{50}+x^{48}+x^{47}+x^{46}\\
&+x^{45}+x^{43}+x^{41}+x^{39}+x^{37}+x^{36}+x^{35}+x^{33}+x^{29}+x^{28}+x^{27}\\
&+x^{26}+x^{25}+x^{21}+x^{20}+x^{19}+x^{18}+x^{15}+x^{14}+x^{12}+x^{11}+x^{10}\\
&+x^{8},\\
p_6(x) = {} & x^{146}+x^{144}+x^{140}+x^{139}+x^{136}+x^{135}+x^{132}+x^{128}+x^{127}+x^{123}\\
&+x^{121}+x^{120}+x^{119}+x^{116}+x^{115}+x^{112}+x^{110}+x^{109}+x^{108}\\
&+x^{104}+x^{103}+x^{101}+x^{99}+x^{98}+x^{96}+x^{95}+x^{94}+x^{91}+x^{90}+x^{88}\\
&+x^{86}+x^{82}+x^{80}+x^{78}+x^{75}+x^{66}+x^{65}+x^{63}+x^{59}+x^{58}+x^{56}\\
&+x^{55}+x^{53}+x^{51}+x^{50}+x^{49}+x^{47}+x^{45}+x^{43}+x^{38}+x^{37}+x^{35}\\
&+x^{33}+x^{32}+x^{31}+x^{29}+x^{28}+x^{27}+x^{26}+x^{25}+x^{24}+x^{21}+x^{15}\\
&+x^{7}+x^{5}+x^{4}+x^{3}+1,\\
p_9(x) = {} & x^{146}+x^{145}+x^{143}+x^{140}+x^{134}+x^{133}+x^{131}+x^{130}+x^{129}+x^{128}\\
&+x^{127}+x^{124}+x^{122}+x^{121}+x^{119}+x^{118}+x^{117}+x^{116}+x^{115}\\
&+x^{114}+x^{113}+x^{112}+x^{111}+x^{108}+x^{106}+x^{105}+x^{103}+x^{102}\\
&+x^{101}+x^{100}+x^{99}+x^{98}+x^{97}+x^{96}+x^{95}+x^{92}+x^{90}+x^{89}+x^{87}\\
&+x^{86}+x^{85}+x^{84}+x^{83}+x^{82}+x^{81}+x^{80}+x^{79}+x^{76}+x^{74}+x^{73}\\
&+x^{71}+x^{70}+x^{69}+x^{68}+x^{67}+x^{64}+x^{58}+x^{57}+x^{55}+x^{52}+x^{50}\\
&+x^{49}+x^{47}+x^{44}+x^{38}+x^{37}+x^{35}+x^{34}+x^{33}+x^{32}+x^{31}+x^{28}\\
&+x^{26}+x^{25}+x^{23}+x^{22}+x^{21}+x^{20}+x^{19}+x^{16}+x^{10}+x^{9}+x^{7}+x^{4},\\
p_{12}(x) = {} & x^{146}+x^{145}+x^{143}+x^{142}+x^{141}+x^{140}+x^{139}+x^{138}+x^{137}+x^{136}\\
&+x^{135}+x^{134}+x^{133}+x^{132}+x^{131}+x^{128}+x^{126}+x^{125}+x^{123}\\
&+x^{120}+x^{110}+x^{109}+x^{107}+x^{104}+x^{94}+x^{93}+x^{91}+x^{88}+x^{78}
\end{aligned}
$$

$$
\begin{aligned}
&+ x^{77} + x^{75} + x^{72} + x^{66} + x^{65} + x^{63} + x^{60} + x^{58} + x^{57} + x^{55} + x^{54}\\
&+ x^{53} + x^{52} + x^{51} + x^{50} + x^{49} + x^{48} + x^{47} + x^{46} + x^{45} + x^{44} + x^{43}\\
&+ x^{42} + x^{41} + x^{40} + x^{39} + x^{38} + x^{37} + x^{36} + x^{35} + x^{32} + x^{30} + x^{29}\\
&+ x^{27} + x^{24} + x^{18} + x^{17} + x^{15} + x^{12} + x^{10} + x^{9} + x^{7} + x^{6} + x^{5} + x^{4}\\
&+ x^{3} + 1,
\end{aligned}
$$

and the initial terms are [1, 0, 1, 0, 0, 0, 0, 1, 1, 1, 0, 0, 1, 0, 0, 1].

For $\phi(W^o, 0, 1)$:

$$
\begin{aligned}
p_0(x) = {}& x^{162} + x^{161} + x^{160} + x^{159} + x^{158} + x^{156} + x^{155} + x^{154} + x^{153} + x^{152}\\
&+ x^{151} + x^{150} + x^{149} + x^{147} + x^{146} + x^{145} + x^{144} + x^{142} + x^{140}\\
&+ x^{139} + x^{138} + x^{135} + x^{133} + x^{132} + x^{131} + x^{130} + x^{128} + x^{127}\\
&+ x^{126} + x^{125} + x^{124} + x^{123} + x^{122} + x^{121} + x^{119} + x^{118} + x^{117}\\
&+ x^{116} + x^{113} + x^{112} + x^{110} + x^{109} + x^{108} + x^{107} + x^{104} + x^{103}\\
&+ x^{101} + x^{98} + x^{97} + x^{94} + x^{89} + x^{87} + x^{83} + x^{81} + x^{80} + x^{79} + x^{77}\\
&+ x^{76} + x^{75} + x^{73} + x^{72} + x^{70} + x^{69} + x^{68} + x^{67} + x^{64} + x^{62} + x^{59}\\
&+ x^{58} + x^{57} + x^{56} + x^{55} + x^{54} + x^{53} + x^{52} + x^{49} + x^{48} + x^{47} + x^{46}\\
&+ x^{45} + x^{44} + x^{42} + x^{41} + x^{40} + x^{39} + x^{37} + x^{35} + x^{34} + x^{32} + x^{31}\\
&+ x^{30} + x^{29} + x^{27},\\
p_3(x) = {}& x^{161} + x^{160} + x^{159} + x^{158} + x^{156} + x^{154} + x^{153} + x^{151} + x^{150} + x^{149}\\
&+ x^{148} + x^{147} + x^{143} + x^{141} + x^{138} + x^{132} + x^{131} + x^{130} + x^{129}\\
&+ x^{127} + x^{125} + x^{124} + x^{123} + x^{120} + x^{118} + x^{117} + x^{116} + x^{112}\\
&+ x^{109} + x^{108} + x^{103} + x^{102} + x^{101} + x^{98} + x^{96} + x^{95} + x^{94} + x^{91}\\
&+ x^{89} + x^{88} + x^{87} + x^{84} + x^{82} + x^{79} + x^{78} + x^{77} + x^{76} + x^{75} + x^{71}\\
&+ x^{69} + x^{66} + x^{60} + x^{59} + x^{58} + x^{57} + x^{55} + x^{53} + x^{52} + x^{51} + x^{48}\\
&+ x^{46} + x^{45} + x^{44} + x^{40} + x^{37} + x^{36} + x^{31} + x^{30} + x^{29} + x^{26} + x^{24}\\
&+ x^{23} + x^{22} + x^{19} + x^{14} + x^{9},\\
p_6(x) = {}& x^{162} + x^{160} + x^{152} + x^{150} + x^{148} + x^{146} + x^{142} + x^{140} + x^{136} + x^{134}\\
&+ x^{132} + x^{130} + x^{128} + x^{126} + x^{122} + x^{118} + x^{114} + x^{112} + x^{110}\\
&+ x^{108} + x^{106} + x^{100} + x^{98} + x^{96} + x^{94} + x^{92} + x^{90} + x^{86} + x^{84} + x^{82}\\
&+ x^{80} + x^{76} + x^{74} + x^{72} + x^{70} + x^{68} + x^{66} + x^{64} + x^{62} + x^{60} + x^{58}\\
&+ x^{56} + x^{50} + x^{48} + x^{46} + x^{42} + x^{40} + x^{38} + x^{34} + x^{30} + x^{28} + x^{26}\\
&+ x^{24} + x^{22} + x^{20} + x^{18} + x^{16} + x^{14} + x^{10} + x^{6},\\
p_9(x) = {}& x^{163} + x^{162} + x^{158} + x^{155} + x^{153} + x^{150} + x^{149} + x^{146} + x^{144} + x^{143}\\
&+ x^{142} + x^{141} + x^{140} + x^{138} + x^{137} + x^{135} + x^{134} + x^{133} + x^{132}\\
&+ x^{130} + x^{129} + x^{128} + x^{127} + x^{126} + x^{125} + x^{124} + x^{123} + x^{122}\\
&+ x^{121} + x^{120} + x^{119} + x^{118} + x^{117} + x^{116} + x^{115} + x^{114} + x^{113}
\end{aligned}
$$

$$
\begin{aligned}
&+x^{112}+x^{111}+x^{110}+x^{109}+x^{108}+x^{107}+x^{106}+x^{105}+x^{104}\\
&+x^{103}+x^{102}+x^{101}+x^{100}+x^{99}+x^{98}+x^{97}+x^{96}+x^{95}+x^{94}\\
&+x^{93}+x^{92}+x^{91}+x^{90}+x^{89}+x^{88}+x^{87}+x^{86}+x^{85}+x^{84}+x^{81}\\
&+x^{80}+x^{79}+x^{77}+x^{76}+x^{74}+x^{72}+x^{71}+x^{68}+x^{66}+x^{65}+x^{62}\\
&+x^{57}+x^{56}+x^{54}+x^{53}+x^{51}+x^{50}+x^{48}+x^{47}+x^{46}+x^{45}+x^{44}\\
&+x^{42}+x^{41}+x^{39}+x^{38}+x^{37}+x^{36}+x^{35}+x^{33}+x^{32}+x^{31}+x^{29}\\
&+x^{28}+x^{26}+x^{24}+x^{23}+x^{20}+x^{19}+x^{17}+x^{11}+x^{8}+x^{3},\\
p_{12}(x)=&\,x^{164}+x^{152}+x^{140}+x^{136}+x^{124}+x^{120}+x^{116}+x^{112}+x^{108}+x^{104}\\
&+x^{100}+x^{96}+x^{92}+x^{88}+x^{80}+x^{76}+x^{64}+x^{56}+x^{52}+x^{48}+x^{44}\\
&+x^{40}+x^{36}+x^{28}+x^{20}+x^{16}+x^{4}+1,
\end{aligned}
$$

and the initial terms are [0, 0, 0, 0, 0, 0, 1, 0, 1, 1, 0, 0, 0, 1, 1, 0].

For $\phi(W^o,1,0)$:

$$
\begin{aligned}
p_0(x)=&\,x^{144}+x^{141}+x^{137}+x^{136}+x^{133}+x^{129}+x^{126}+x^{125}+x^{124}+x^{121}\\
&+x^{119}+x^{118}+x^{117}+x^{114}+x^{112}+x^{107}+x^{102}+x^{100}+x^{98}+x^{94}\\
&+x^{92}+x^{91}+x^{86}+x^{85}+x^{84}+x^{83}+x^{81}+x^{80}+x^{79}+x^{78}+x^{76}\\
&+x^{74}+x^{73}+x^{64}+x^{59}+x^{56}+x^{53}+x^{49}+x^{46}+x^{43}+x^{40}+x^{35}\\
&+x^{34}+x^{33}+x^{32}+x^{31}+x^{30}+x^{29}+x^{28}+x^{25}+x^{24}+x^{23}+x^{22}\\
&+x^{21}+x^{20}+x^{18},\\
p_3(x)=&\,x^{137}+x^{136}+x^{135}+x^{134}+x^{133}+x^{131}+x^{126}+x^{121}+x^{113}+x^{112}\\
&+x^{111}+x^{110}+x^{109}+x^{107}+x^{102}+x^{96}+x^{95}+x^{94}+x^{93}+x^{91}\\
&+x^{86}+x^{81}+x^{65}+x^{64}+x^{63}+x^{62}+x^{61}+x^{59}+x^{54}+x^{49}+x^{41}\\
&+x^{40}+x^{39}+x^{38}+x^{37}+x^{35}+x^{30}+x^{24}+x^{23}+x^{22}+x^{21}+x^{19}\\
&+x^{14}+x^{9},\\
p_6(x)=&\,x^{138}+x^{136}+x^{134}+x^{132}+x^{130}+x^{126}+x^{122}+x^{120}+x^{118}+x^{114}\\
&+x^{108}+x^{106}+x^{94}+x^{90}+x^{88}+x^{84}+x^{82}+x^{80}+x^{76}+x^{74}+x^{72}\\
&+x^{68}+x^{64}+x^{56}+x^{46}+x^{44}+x^{40}+x^{38}+x^{34}+x^{32}+x^{30}+x^{26}\\
&+x^{24}+x^{20}+x^{16}+x^{14}+x^{10}+x^{6},\\
p_9(x)=&\,x^{139}+x^{138}+x^{135}+x^{129}+x^{127}+x^{122}+x^{120}+x^{119}+x^{115}+x^{113}\\
&+x^{111}+x^{106}+x^{104}+x^{103}+x^{99}+x^{97}+x^{95}+x^{90}+x^{88}+x^{87}\\
&+x^{83}+x^{81}+x^{79}+x^{74}+x^{72}+x^{71}+x^{67}+x^{65}+x^{63}+x^{59}+x^{56}\\
&+x^{51}+x^{43}+x^{42}+x^{39}+x^{33}+x^{31}+x^{26}+x^{24}+x^{23}+x^{19}+x^{17}\\
&+x^{15}+x^{11}+x^{8}+x^{3},\\
p_{12}(x)=&\,x^{140}+x^{136}+x^{132}+x^{128}+x^{120}+x^{104}+x^{88}+x^{72}+x^{60}+x^{52}\\
&+x^{48}+x^{44}+x^{40}+x^{36}+x^{32}+x^{24}+x^{12}+x^{4}+1,
\end{aligned}
$$

and the initial terms are [0, 1, 0, 1, 0, 0, 0, 0, 0, 1, 0, 1, 0, 1, 0, 1].

For $\phi(W^o, 1, 1)$:

$$
\begin{aligned}
p_0(x) = {} & x^{147} + x^{145} + x^{142} + x^{141} + x^{137} + x^{136} + x^{135} + x^{132} + x^{128} + x^{127} \\
& + x^{124} + x^{122} + x^{121} + x^{119} + x^{117} + x^{116} + x^{115} + x^{114} + x^{112} \\
& + x^{107} + x^{105} + x^{103} + x^{98} + x^{97} + x^{96} + x^{95} + x^{94} + x^{93} + x^{92} + x^{90} \\
& + x^{87} + x^{86} + x^{84} + x^{80} + x^{78} + x^{76} + x^{72} + x^{70} + x^{69} + x^{66} + x^{65} \\
& + x^{64} + x^{63} + x^{62} + x^{61} + x^{58} + x^{54} + x^{52} + x^{51} + x^{49} + x^{47} + x^{46} \\
& + x^{43} + x^{41} + x^{40} + x^{37} + x^{36} + x^{35} + x^{33}, \\
p_3(x) = {} & x^{146} + x^{143} + x^{137} + x^{136} + x^{135} + x^{133} + x^{132} + x^{131} + x^{128} + x^{127} \\
& + x^{123} + x^{121} + x^{120} + x^{119} + x^{118} + x^{117} + x^{114} + x^{110} + x^{109} \\
& + x^{108} + x^{107} + x^{106} + x^{105} + x^{103} + x^{102} + x^{100} + x^{97} + x^{96} + x^{95} \\
& + x^{93} + x^{92} + x^{91} + x^{86} + x^{82} + x^{80} + x^{77} + x^{76} + x^{75} + x^{74} + x^{73} \\
& + x^{72} + x^{71} + x^{70} + x^{69} + x^{66} + x^{62} + x^{61} + x^{58} + x^{57} + x^{55} + x^{54} \\
& + x^{53} + x^{52} + x^{48} + x^{46} + x^{43} + x^{37} + x^{36} + x^{34} + x^{33} + x^{32} + x^{30} \\
& + x^{28} + x^{24} + x^{23} + x^{21} + x^{20} + x^{12}, \\
p_6(x) = {} & x^{146} + x^{143} + x^{141} + x^{135} + x^{132} + x^{130} + x^{129} + x^{128} + x^{124} + x^{123} \\
& + x^{122} + x^{120} + x^{116} + x^{114} + x^{112} + x^{111} + x^{109} + x^{108} + x^{107} \\
& + x^{105} + x^{102} + x^{99} + x^{96} + x^{95} + x^{94} + x^{92} + x^{90} + x^{89} + x^{88} + x^{86} \\
& + x^{85} + x^{84} + x^{79} + x^{78} + x^{77} + x^{75} + x^{73} + x^{71} + x^{68} + x^{66} + x^{65} \\
& + x^{63} + x^{59} + x^{58} + x^{56} + x^{55} + x^{54} + x^{52} + x^{51} + x^{49} + x^{48} + x^{46} \\
& + x^{45} + x^{41} + x^{40} + x^{39} + x^{36} + x^{33} + x^{31} + x^{30} + x^{27} + x^{25} + x^{24} \\
& + x^{22} + x^{20} + x^{18} + x^{15} + x^{8} + x^{6} + x^{5} + x^{3} + 1, \\
p_9(x) = {} & x^{146} + x^{145} + x^{143} + x^{140} + x^{134} + x^{133} + x^{131} + x^{130} + x^{129} + x^{128} \\
& + x^{127} + x^{124} + x^{122} + x^{121} + x^{119} + x^{118} + x^{117} + x^{116} + x^{115} \\
& + x^{114} + x^{113} + x^{112} + x^{111} + x^{108} + x^{106} + x^{105} + x^{103} + x^{102} \\
& + x^{101} + x^{100} + x^{99} + x^{98} + x^{97} + x^{96} + x^{95} + x^{92} + x^{90} + x^{89} + x^{87} \\
& + x^{86} + x^{85} + x^{84} + x^{83} + x^{82} + x^{81} + x^{80} + x^{79} + x^{76} + x^{74} + x^{73} \\
& + x^{71} + x^{70} + x^{69} + x^{68} + x^{67} + x^{64} + x^{58} + x^{57} + x^{55} + x^{52} + x^{50} \\
& + x^{49} + x^{47} + x^{44} + x^{38} + x^{37} + x^{35} + x^{34} + x^{33} + x^{32} + x^{31} + x^{28} \\
& + x^{26} + x^{25} + x^{23} + x^{22} + x^{21} + x^{20} + x^{19} + x^{16} + x^{10} + x^{9} + x^{7} + x^{4}, \\
p_{12}(x) = {} & x^{146} + x^{145} + x^{143} + x^{142} + x^{141} + x^{140} + x^{139} + x^{138} + x^{137} + x^{136} \\
& + x^{135} + x^{134} + x^{133} + x^{132} + x^{131} + x^{128} + x^{126} + x^{125} + x^{123} \\
& + x^{120} + x^{110} + x^{109} + x^{107} + x^{104} + x^{94} + x^{93} + x^{91} + x^{88} + x^{78} \\
& + x^{77} + x^{75} + x^{72} + x^{66} + x^{65} + x^{63} + x^{60} + x^{58} + x^{57} + x^{55} + x^{54} \\
& + x^{53} + x^{52} + x^{51} + x^{50} + x^{49} + x^{48} + x^{47} + x^{46} + x^{45} + x^{44} + x^{43} \\
& + x^{42} + x^{41} + x^{40} + x^{39} + x^{38} + x^{37} + x^{36} + x^{35} + x^{32} + x^{30} + x^{29}
\end{aligned}
$$

$$+ x^{27} + x^{24} + x^{18} + x^{17} + x^{15} + x^{12} + x^{10} + x^9 + x^7 + x^6 + x^5 + x^4$$
$$+ x^3 + 1,$$

and the initial terms are [0, 0, 0, 0, 0, 0, 0, 1, 0, 1, 1, 0, 0, 0, 0, 1].

Below is the transition function and output function of an 2-automaton that generates $T = M^o_{0,0}$:

Transition function $(n, j) \mapsto \delta(n, j)$ $(\Lambda(n) := [\delta(n, 0), \delta(n, 1)])$:

n	$\Lambda(n)$	n	$\Lambda(n)$	n	$\Lambda(n)$	n	$\Lambda(n)$
0	[1, 2]	1305	[1963, 1460]	2610	[3314, 137]	3915	[4355, 1530]
1	[3, 4]	1306	[1964, 1965]	2611	[3315, 1445]	3916	[3301, 1738]
2	[5, 6]	1307	[214, 663]	2612	[3316, 717]	3917	[4356, 563]
3	[7, 8]	1308	[1966, 562]	2613	[1966, 1530]	3918	[4357, 4358]
4	[9, 10]	1309	[1967, 1968]	2614	[1790, 673]	3919	[2931, 1559]
5	[11, 12]	1310	[771, 1804]	2615	[3317, 3208]	3920	[466, 642]
6	[13, 14]	1311	[1969, 170]	2616	[696, 2020]	3921	[4359, 2919]
7	[15, 16]	1312	[1602, 468]	2617	[2999, 1915]	3922	[3296, 1456]
8	[17, 18]	1313	[1970, 1493]	2618	[3318, 514]	3923	[4360, 483]
9	[19, 20]	1314	[1926, 1971]	2619	[3319, 1876]	3924	[4361, 1626]
10	[21, 22]	1315	[1972, 1973]	2620	[3231, 792]	3925	[1970, 3110]
11	[23, 24]	1316	[567, 478]	2621	[3037, 1446]	3926	[4362, 4197]
12	[25, 26]	1317	[1974, 1975]	2622	[660, 3144]	3927	[4363, 172]
13	[27, 28]	1318	[1976, 1415]	2623	[164, 1698]	3928	[4364, 700]
14	[29, 30]	1319	[1977, 475]	2624	[3302, 723]	3929	[1570, 610]
15	[31, 32]	1320	[1675, 1583]	2625	[3320, 1899]	3930	[4365, 3189]
16	[33, 34]	1321	[1978, 536]	2626	[3138, 1437]	3931	[3136, 2010]
17	[35, 36]	1322	[1979, 597]	2627	[3321, 3322]	3932	[1766, 655]
18	[37, 38]	1323	[1980, 1731]	2628	[227, 1656]	3933	[130, 627]
19	[39, 40]	1324	[1981, 168]	2629	[1700, 3183]	3934	[1648, 605]
20	[41, 42]	1325	[520, 1982]	2630	[1690, 611]	3935	[4366, 716]
21	[43, 44]	1326	[205, 461]	2631	[1608, 721]	3936	[4367, 3210]
22	[45, 46]	1327	[1983, 1984]	2632	[3143, 170]	3937	[4368, 2020]
23	[47, 48]	1328	[1731, 167]	2633	[3099, 1743]	3938	[4369, 216]
24	[49, 50]	1329	[1985, 1986]	2634	[3323, 674]	3939	[2982, 3252]
25	[51, 52]	1330	[1987, 1582]	2635	[676, 499]	3940	[4370, 1767]
26	[53, 54]	1331	[1460, 1635]	2636	[694, 548]	3941	[4371, 1731]
27	[55, 56]	1332	[1449, 1988]	2637	[3324, 3325]	3942	[3402, 4372]
28	[57, 58]	1333	[1989, 1933]	2638	[3127, 1931]	3943	[183, 765]
29	[59, 60]	1334	[1990, 163]	2639	[1684, 802]	3944	[4373, 1601]
30	[61, 62]	1335	[1991, 1917]	2640	[3326, 3327]	3945	[4374, 3112]
31	[63, 64]	1336	[1992, 730]	2641	[1607, 1856]	3946	[4375, 795]
32	[65, 66]	1337	[1993, 57]	2642	[1789, 672]	3947	[4376, 1642]
33	[67, 68]	1338	[541, 1994]	2643	[3328, 1639]	3948	[2940, 497]
34	[69, 70]	1339	[1995, 1543]	2644	[3329, 1944]	3949	[4377, 633]
35	[71, 72]	1340	[1996, 1997]	2645	[2922, 3330]	3950	[4378, 3272]

36	[73, 74]	1341	[1998, 656]	2646	[3331, 3332]	3951	[4379, 4380]
37	[75, 76]	1342	[1999, 2000]	2647	[3299, 1872]	3952	[1888, 151]
38	[77, 78]	1343	[1766, 1480]	2648	[1626, 1842]	3953	[3110, 1913]
39	[79, 80]	1344	[1990, 1555]	2649	[37, 1695]	3954	[623, 628]
40	[81, 82]	1345	[2001, 554]	2650	[2027, 151]	3955	[4381, 3339]
41	[83, 84]	1346	[2002, 2003]	2651	[3333, 649]	3956	[3382, 687]
42	[85, 86]	1347	[1867, 1842]	2652	[2034, 165]	3957	[4382, 570]
43	[87, 88]	1348	[1513, 557]	2653	[215, 1780]	3958	[1989, 536]
44	[89, 90]	1349	[2004, 2005]	2654	[3334, 517]	3959	[4383, 599]
45	[91, 92]	1350	[2006, 1615]	2655	[3335, 633]	3960	[4384, 240]
46	[93, 94]	1351	[1776, 1398]	2656	[575, 1757]	3961	[2995, 1939]
47	[95, 96]	1352	[2007, 2008]	2657	[14, 1968]	3962	[3087, 605]
48	[97, 98]	1353	[499, 535]	2658	[3336, 635]	3963	[1881, 1428]
49	[99, 100]	1354	[2009, 2010]	2659	[670, 222]	3964	[4385, 521]
50	[20, 101]	1355	[1504, 1675]	2660	[3337, 1492]	3965	[4386, 726]
51	[102, 103]	1356	[2011, 34]	2661	[3280, 2937]	3966	[136, 543]
52	[104, 105]	1357	[593, 732]	2662	[565, 509]	3967	[4201, 801]
53	[106, 107]	1358	[696, 1495]	2663	[3338, 1887]	3968	[4387, 4388]
54	[108, 109]	1359	[2012, 2013]	2664	[533, 3339]	3969	[3304, 3021]
55	[110, 66]	1360	[2014, 729]	2665	[802, 184]	3970	[3244, 1494]
56	[111, 112]	1361	[2015, 2016]	2666	[3340, 2029]	3971	[4389, 1870]
57	[113, 114]	1362	[2017, 2018]	2667	[3341, 9]	3972	[4390, 4391]
58	[115, 116]	1363	[2019, 2020]	2668	[1855, 508]	3973	[1730, 1592]
59	[117, 118]	1364	[491, 716]	2669	[3342, 1516]	3974	[4392, 527]
60	[119, 120]	1365	[2021, 485]	2670	[3343, 628]	3975	[3055, 225]
61	[121, 122]	1366	[1918, 2022]	2671	[535, 1933]	3976	[705, 645]
62	[123, 124]	1367	[2023, 1845]	2672	[1481, 1624]	3977	[4393, 4394]
63	[1, 125]	1368	[2014, 737]	2673	[3344, 1744]	3978	[4275, 642]
64	[126, 127]	1369	[2024, 1401]	2674	[3201, 1932]	3979	[4395, 3251]
65	[128, 129]	1370	[2025, 739]	2675	[3345, 3167]	3980	[3412, 3188]
66	[130, 131]	1371	[2026, 1713]	2676	[141, 3011]	3981	[3009, 2939]
67	[132, 133]	1372	[2027, 1889]	2677	[238, 548]	3982	[3319, 567]
68	[134, 135]	1373	[2028, 2029]	2678	[3346, 671]	3983	[3283, 1559]
69	[136, 137]	1374	[574, 1725]	2679	[3347, 2945]	3984	[4344, 1619]
70	[138, 139]	1375	[2030, 557]	2680	[1864, 765]	3985	[1869, 1746]
71	[140, 141]	1376	[664, 734]	2681	[3348, 648]	3986	[4396, 4397]
72	[142, 143]	1377	[2031, 1557]	2682	[1546, 688]	3987	[1981, 1814]
73	[144, 145]	1378	[2032, 1517]	2683	[1409, 3349]	3988	[4398, 545]
74	[146, 147]	1379	[1634, 1427]	2684	[3350, 1986]	3989	[4399, 2975]
75	[148, 149]	1380	[655, 1668]	2685	[3351, 1675]	3990	[4400, 3194]
76	[150, 151]	1381	[2033, 2034]	2686	[3352, 1732]	3991	[4401, 1642]
77	[152, 153]	1382	[14, 219]	2687	[2970, 1509]	3992	[1405, 804]
78	[154, 155]	1383	[2035, 716]	2688	[2968, 3332]	3993	[4158, 3164]
79	[156, 157]	1384	[2034, 1698]	2689	[688, 787]	3994	[3410, 1577]

80	[158, 159]	1385	[1891, 1780]	2690	[3041, 1418]	3995	[4402, 1843]
81	[160, 161]	1386	[1597, 1489]	2691	[3353, 1752]	3996	[776, 1616]
82	[162, 163]	1387	[2036, 750]	2692	[3354, 3266]	3997	[4403, 632]
83	[164, 165]	1388	[1929, 1609]	2693	[3355, 3219]	3998	[3103, 4217]
84	[166, 167]	1389	[2037, 185]	2694	[34, 1473]	3999	[4404, 1802]
85	[168, 169]	1390	[569, 1589]	2695	[675, 498]	4000	[4405, 743]
86	[170, 171]	1391	[2038, 712]	2696	[1415, 553]	4001	[710, 1469]
87	[172, 173]	1392	[46, 1819]	2697	[3356, 694]	4002	[4406, 2925]
88	[174, 175]	1393	[2039, 2040]	2698	[3357, 558]	4003	[4237, 3243]
89	[176, 177]	1394	[2041, 2042]	2699	[3245, 1513]	4004	[4407, 1479]
90	[178, 179]	1395	[848, 1192]	2700	[3061, 1735]	4005	[603, 798]
91	[180, 181]	1396	[2043, 2044]	2701	[2941, 1589]	4006	[4408, 578]
92	[13, 182]	1397	[2045, 2046]	2702	[3358, 1835]	4007	[1942, 462]
93	[183, 184]	1398	[1161, 2047]	2703	[3204, 1539]	4008	[4132, 1428]
94	[185, 173]	1399	[2048, 849]	2704	[3303, 3085]	4009	[4409, 4410]
95	[186, 187]	1400	[1039, 2049]	2705	[1575, 1873]	4010	[4116, 169]
96	[188, 189]	1401	[2050, 1282]	2706	[3359, 637]	4011	[4411, 1519]
97	[190, 191]	1402	[959, 2051]	2707	[3360, 32]	4012	[1479, 655]
98	[192, 193]	1403	[2052, 2053]	2708	[3361, 3362]	4013	[140, 639]
99	[194, 195]	1404	[2054, 2055]	2709	[2966, 737]	4014	[4412, 4413]
100	[196, 197]	1405	[2056, 400]	2710	[3363, 1953]	4015	[4362, 1589]
101	[40, 198]	1406	[2057, 2058]	2711	[3364, 513]	4016	[3250, 4229]
102	[199, 200]	1407	[864, 2059]	2712	[3365, 3366]	4017	[1593, 138]
103	[201, 47]	1408	[306, 1374]	2713	[1512, 1403]	4018	[4414, 721]
104	[202, 203]	1409	[2060, 454]	2714	[3367, 1412]	4019	[3215, 790]
105	[204, 58]	1410	[837, 2061]	2715	[492, 231]	4020	[4415, 3135]
106	[205, 206]	1411	[18, 318]	2716	[3368, 42]	4021	[1914, 3026]
107	[207, 208]	1412	[919, 2062]	2717	[1416, 684]	4022	[4416, 1887]
108	[209, 210]	1413	[2063, 974]	2718	[1510, 1453]	4023	[4417, 1535]
109	[211, 212]	1414	[2064, 2065]	2719	[3369, 1496]	4024	[4418, 1880]
110	[213, 214]	1415	[2066, 2067]	2720	[1711, 1573]	4025	[1958, 161]
111	[215, 216]	1416	[1061, 2068]	2721	[3370, 1541]	4026	[4419, 3174]
112	[217, 218]	1417	[2069, 2070]	2722	[162, 1555]	4027	[3343, 1890]
113	[219, 220]	1418	[2071, 1242]	2723	[3371, 3372]	4028	[3227, 2000]
114	[221, 222]	1419	[2072, 2073]	2724	[747, 178]	4029	[4420, 626]
115	[223, 224]	1420	[2074, 2075]	2725	[3373, 667]	4030	[643, 706]
116	[225, 226]	1421	[2076, 2077]	2726	[7, 632]	4031	[4421, 4422]
117	[227, 228]	1422	[2078, 2079]	2727	[219, 1944]	4032	[608, 495]
118	[229, 230]	1423	[950, 2080]	2728	[3374, 179]	4033	[2036, 1491]
119	[231, 232]	1424	[2081, 356]	2729	[3375, 3164]	4034	[1459, 1634]
120	[233, 234]	1425	[2082, 2083]	2730	[3376, 1822]	4035	[4141, 1470]
121	[235, 236]	1426	[2084, 309]	2731	[3377, 609]	4036	[4423, 4424]
122	[237, 238]	1427	[2085, 2086]	2732	[3378, 1774]	4037	[3031, 475]
123	[238, 239]	1428	[299, 2087]	2733	[1454, 1400]	4038	[4425, 611]

124	[240, 241]	1429	[2088, 277]	2734	[3379, 548]	4039	[4126, 3051]
125	[242, 243]	1430	[2073, 333]	2735	[3380, 1977]	4040	[3076, 679]
126	[244, 245]	1431	[2089, 2090]	2736	[1686, 1839]	4041	[4426, 644]
127	[246, 247]	1432	[2091, 2092]	2737	[1393, 3381]	4042	[718, 720]
128	[248, 249]	1433	[2093, 2090]	2738	[3165, 1849]	4043	[4279, 1599]
129	[250, 251]	1434	[2094, 2095]	2739	[3193, 241]	4044	[464, 1447]
130	[252, 253]	1435	[2096, 2097]	2740	[3382, 171]	4045	[4427, 775]
131	[254, 255]	1436	[2098, 2099]	2741	[1780, 197]	4046	[4428, 2923]
132	[256, 257]	1437	[2055, 296]	2742	[1991, 1534]	4047	[3218, 4301]
133	[258, 259]	1438	[2100, 338]	2743	[59, 214]	4048	[3345, 4353]
134	[260, 261]	1439	[2101, 2102]	2744	[3383, 3384]	4049	[3012, 232]
135	[262, 263]	1440	[2103, 2104]	2745	[3052, 2003]	4050	[4429, 1520]
136	[264, 265]	1441	[2105, 2106]	2746	[3385, 1451]	4051	[4187, 4167]
137	[266, 267]	1442	[2107, 304]	2747	[3386, 3387]	4052	[4430, 468]
138	[268, 269]	1443	[2108, 1302]	2748	[759, 1875]	4053	[4129, 736]
139	[270, 271]	1444	[2109, 2110]	2749	[620, 460]	4054	[3342, 1903]
140	[272, 273]	1445	[2111, 2112]	2750	[3388, 3389]	4055	[3079, 680]
141	[274, 266]	1446	[2113, 2114]	2751	[2025, 1481]	4056	[2943, 704]
142	[275, 276]	1447	[1392, 2115]	2752	[1399, 1455]	4057	[3199, 639]
143	[277, 278]	1448	[2116, 2117]	2753	[3390, 1651]	4058	[1663, 3112]
144	[279, 4]	1449	[2118, 2119]	2754	[3391, 1493]	4059	[4431, 216]
145	[280, 281]	1450	[2120, 1098]	2755	[3392, 3393]	4060	[4218, 1701]
146	[282, 283]	1451	[2121, 2122]	2756	[1413, 549]	4061	[1598, 491]
147	[284, 285]	1452	[2123, 2124]	2757	[3265, 3394]	4062	[1728, 1429]
148	[286, 287]	1453	[989, 262]	2758	[3395, 1479]	4063	[1500, 799]
149	[288, 289]	1454	[2125, 2126]	2759	[184, 1549]	4064	[1629, 528]
150	[290, 291]	1455	[2127, 851]	2760	[1943, 220]	4065	[4300, 1698]
151	[292, 293]	1456	[2128, 1244]	2761	[3396, 1453]	4066	[4260, 667]
152	[294, 295]	1457	[2129, 2130]	2762	[3397, 471]	4067	[1681, 1896]
153	[296, 297]	1458	[2131, 2132]	2763	[3398, 40]	4068	[4432, 221]
154	[298, 299]	1459	[2133, 2134]	2764	[3399, 3112]	4069	[4433, 158]
155	[249, 300]	1460	[1377, 1007]	2765	[3070, 1608]	4070	[1726, 1475]
156	[301, 302]	1461	[2135, 2136]	2766	[3400, 1994]	4071	[4350, 3170]
157	[303, 304]	1462	[2137, 2138]	2767	[1626, 1565]	4072	[2033, 1697]
158	[305, 306]	1463	[2139, 2140]	2768	[3401, 3038]	4073	[4434, 1496]
159	[307, 308]	1464	[2141, 2142]	2769	[1716, 1674]	4074	[4435, 2966]
160	[309, 310]	1465	[2143, 2144]	2770	[3402, 3058]	4075	[618, 129]
161	[311, 312]	1466	[445, 1032]	2771	[3403, 131]	4076	[1685, 3030]
162	[313, 80]	1467	[2145, 2146]	2772	[1433, 682]	4077	[681, 1408]
163	[314, 315]	1468	[2147, 2148]	2773	[3404, 762]	4078	[4436, 471]
164	[316, 317]	1469	[2149, 2150]	2774	[155, 1882]	4079	[4364, 189]
165	[318, 319]	1470	[2151, 2152]	2775	[3405, 1735]	4080	[4437, 1478]
166	[320, 321]	1471	[2153, 2154]	2776	[53, 3406]	4081	[4438, 4439]
167	[322, 323]	1472	[2155, 2156]	2777	[3138, 3165]	4082	[3361, 2022]

168	[324, 325]	1473	[2157, 2158]	2778	[3407, 193]	4083	[4381, 534]
169	[326, 327]	1474	[2159, 2160]	2779	[3408, 3409]	4084	[4440, 4441]
170	[328, 329]	1475	[2161, 2162]	2780	[1810, 1836]	4085	[546, 1814]
171	[330, 331]	1476	[2163, 2164]	2781	[3410, 1599]	4086	[3411, 2923]
172	[332, 333]	1477	[1035, 1229]	2782	[3411, 3330]	4087	[708, 1616]
173	[334, 335]	1478	[2165, 2166]	2783	[3412, 3297]	4088	[4442, 3173]
174	[336, 337]	1479	[2167, 2168]	2784	[3413, 3406]	4089	[4443, 4444]
175	[338, 339]	1480	[2169, 2170]	2785	[185, 732]	4090	[4137, 3183]
176	[340, 341]	1481	[2171, 2172]	2786	[3354, 3394]	4091	[32, 212]
177	[342, 343]	1482	[2173, 2174]	2787	[150, 1889]	4092	[4445, 1770]
178	[344, 345]	1483	[2175, 2176]	2788	[3414, 646]	4093	[1972, 663]
179	[346, 347]	1484	[2177, 949]	2789	[3415, 1652]	4094	[4446, 1842]
180	[348, 349]	1485	[2178, 941]	2790	[1710, 1818]	4095	[1859, 508]
181	[350, 351]	1486	[2179, 2180]	2791	[3416, 2942]	4096	[1737, 795]
182	[352, 353]	1487	[2181, 2182]	2792	[1851, 1460]	4097	[4447, 3138]
183	[354, 355]	1488	[994, 2183]	2793	[3417, 1986]	4098	[4448, 1435]
184	[356, 357]	1489	[2184, 2185]	2794	[3418, 659]	4099	[1, 754]
185	[358, 359]	1490	[2186, 2187]	2795	[614, 1630]	4100	[4375, 1738]
186	[360, 361]	1491	[2188, 2189]	2796	[3419, 3228]	4101	[4385, 1982]
187	[362, 363]	1492	[1353, 2190]	2797	[1639, 157]	4102	[4449, 758]
188	[364, 365]	1493	[2191, 859]	2798	[3420, 225]	4103	[2021, 1964]
189	[366, 367]	1494	[2192, 2193]	2799	[191, 582]	4104	[4450, 592]
190	[368, 369]	1495	[828, 2194]	2800	[60, 1973]	4105	[4451, 1513]
191	[370, 371]	1496	[2195, 2196]	2801	[3421, 201]	4106	[3140, 784]
192	[372, 373]	1497	[2197, 2198]	2802	[1949, 1647]	4107	[4355, 562]
193	[374, 375]	1498	[2199, 2200]	2803	[470, 1573]	4108	[3171, 513]
194	[109, 376]	1499	[2201, 2202]	2804	[1917, 1535]	4109	[4452, 1545]
195	[377, 378]	1500	[2203, 1142]	2805	[1753, 2016]	4110	[4453, 4454]
196	[379, 380]	1501	[64, 2204]	2806	[3422, 235]	4111	[3062, 1971]
197	[381, 382]	1502	[82, 1324]	2807	[2961, 2017]	4112	[3174, 621]
198	[80, 383]	1503	[2205, 2206]	2808	[3202, 36]	4113	[3102, 720]
199	[384, 385]	1504	[2104, 2207]	2809	[3423, 617]	4114	[3403, 627]
200	[386, 387]	1505	[2106, 2208]	2810	[3424, 3208]	4115	[4455, 830]
201	[388, 97]	1506	[2209, 872]	2811	[1751, 3148]	4116	[4456, 2298]
202	[389, 390]	1507	[2210, 1073]	2812	[3279, 679]	4117	[3735, 2189]
203	[391, 392]	1508	[2211, 2212]	2813	[699, 189]	4118	[4457, 4458]
204	[393, 394]	1509	[2213, 2214]	2814	[3425, 1863]	4119	[2830, 1270]
205	[395, 396]	1510	[2215, 2216]	2815	[3426, 663]	4120	[4459, 4017]
206	[295, 397]	1511	[2217, 2100]	2816	[3427, 480]	4121	[4460, 2054]
207	[398, 399]	1512	[2218, 2219]	2817	[1419, 481]	4122	[4461, 2758]
208	[400, 401]	1513	[2220, 2221]	2818	[3428, 3429]	4123	[4462, 1390]
209	[402, 403]	1514	[2222, 2223]	2819	[750, 1492]	4124	[4463, 4464]
210	[404, 405]	1515	[2224, 811]	2820	[3020, 3055]	4125	[4465, 4466]
211	[406, 407]	1516	[2225, 2226]	2821	[241, 779]	4126	[4467, 2415]

212	[408, 409]	1517	[399, 2227]	2822	[3246, 45]	4127	[2419, 2112]
213	[410, 411]	1518	[2228, 947]	2823	[3286, 3173]	4128	[4468, 2556]
214	[412, 273]	1519	[1187, 2229]	2824	[765, 1549]	4129	[4469, 4004]
215	[413, 381]	1520	[2230, 2231]	2825	[3430, 1637]	4130	[3771, 2705]
216	[414, 415]	1521	[1095, 2129]	2826	[1517, 1811]	4131	[4470, 1346]
217	[416, 417]	1522	[852, 2125]	2827	[3431, 1624]	4132	[4471, 3613]
218	[418, 419]	1523	[896, 1039]	2828	[1694, 233]	4133	[1184, 1378]
219	[28, 420]	1524	[2232, 2233]	2829	[2013, 3307]	4134	[1252, 836]
220	[421, 106]	1525	[2234, 2235]	2830	[3236, 1601]	4135	[4472, 2618]
221	[422, 423]	1526	[2236, 2237]	2831	[1768, 687]	4136	[4473, 937]
222	[424, 425]	1527	[2238, 979]	2832	[228, 756]	4137	[4474, 890]
223	[426, 427]	1528	[1293, 2239]	2833	[3432, 2923]	4138	[2307, 2885]
224	[385, 428]	1529	[2240, 2241]	2834	[3433, 1874]	4139	[4475, 4476]
225	[429, 430]	1530	[1357, 2242]	2835	[3373, 1771]	4140	[4477, 2286]
226	[431, 432]	1531	[2243, 2244]	2836	[3434, 798]	4141	[2187, 4478]
227	[433, 434]	1532	[2245, 2246]	2837	[3256, 3121]	4142	[4479, 4109]
228	[435, 292]	1533	[1141, 2247]	2838	[3269, 748]	4143	[4480, 3575]
229	[436, 437]	1534	[2248, 2043]	2839	[3435, 3045]	4144	[4481, 95]
230	[438, 439]	1535	[2249, 2250]	2840	[654, 1480]	4145	[2504, 2258]
231	[440, 441]	1536	[2251, 457]	2841	[3436, 514]	4146	[4476, 4114]
232	[442, 443]	1537	[2252, 2253]	2842	[3437, 603]	4147	[4482, 3498]
233	[444, 445]	1538	[2254, 352]	2843	[2963, 231]	4148	[4483, 4484]
234	[446, 447]	1539	[1072, 2255]	2844	[1679, 1779]	4149	[4485, 2593]
235	[448, 449]	1540	[2256, 930]	2845	[1523, 1399]	4150	[4486, 1321]
236	[450, 451]	1541	[2257, 2258]	2846	[3438, 3359]	4151	[3840, 864]
237	[452, 453]	1542	[2259, 2260]	2847	[1581, 3190]	4152	[4487, 330]
238	[454, 455]	1543	[2261, 2262]	2848	[3225, 1872]	4153	[2206, 3846]
239	[453, 402]	1544	[2263, 63]	2849	[3439, 3440]	4154	[4488, 2053]
240	[456, 457]	1545	[78, 2264]	2850	[1499, 1790]	4155	[4489, 4490]
241	[458, 418]	1546	[2265, 1359]	2851	[3441, 3442]	4156	[1362, 2890]
242	[459, 460]	1547	[2266, 373]	2852	[795, 3045]	4157	[2279, 1046]
243	[153, 461]	1548	[2267, 2268]	2853	[3421, 698]	4158	[2792, 2082]
244	[462, 463]	1549	[2160, 2269]	2854	[3401, 1671]	4159	[4491, 2286]
245	[464, 465]	1550	[2270, 2271]	2855	[3003, 1819]	4160	[3613, 2058]
246	[466, 467]	1551	[2272, 2273]	2856	[3443, 1744]	4161	[4492, 931]
247	[468, 469]	1552	[2274, 1381]	2857	[3405, 701]	4162	[4493, 4494]
248	[470, 195]	1553	[1008, 2275]	2858	[2003, 731]	4163	[4495, 2399]
249	[471, 48]	1554	[2276, 2277]	2859	[1945, 225]	4164	[4496, 3742]
250	[472, 473]	1555	[2278, 2279]	2860	[3444, 1988]	4165	[3530, 3615]
251	[474, 475]	1556	[2280, 2281]	2861	[154, 1404]	4166	[4497, 4498]
252	[476, 477]	1557	[2282, 2283]	2862	[1590, 1478]	4167	[4499, 4500]
253	[478, 479]	1558	[2284, 2285]	2863	[2004, 58]	4168	[1085, 889]
254	[480, 481]	1559	[2286, 2287]	2864	[3445, 3446]	4169	[4501, 4001]
255	[482, 483]	1560	[2288, 2289]	2865	[3213, 1779]	4170	[4502, 3999]

256	[484, 485]	1561	[2290, 2291]	2866	[2971, 549]	4171	[4503, 1140]
257	[486, 487]	1562	[2292, 2293]	2867	[3447, 2919]	4172	[4504, 3571]
258	[488, 489]	1563	[283, 362]	2868	[3448, 3449]	4173	[2283, 3494]
259	[490, 491]	1564	[2294, 2105]	2869	[2967, 1875]	4174	[4505, 4503]
260	[492, 493]	1565	[2295, 372]	2870	[766, 1501]	4175	[4506, 2778]
261	[494, 495]	1566	[2296, 2151]	2871	[3450, 3164]	4176	[4507, 3486]
262	[496, 497]	1567	[2297, 286]	2872	[3451, 3093]	4177	[4508, 1358]
263	[498, 499]	1568	[2298, 2299]	2873	[3452, 206]	4178	[4509, 1363]
264	[500, 501]	1569	[2300, 1180]	2874	[547, 239]	4179	[4510, 2296]
265	[502, 503]	1570	[1028, 1077]	2875	[3453, 771]	4180	[441, 112]
266	[504, 505]	1571	[2077, 2301]	2876	[3454, 1773]	4181	[4511, 1258]
267	[483, 506]	1572	[2144, 2302]	2877	[3455, 1537]	4182	[4512, 4513]
268	[507, 508]	1573	[2303, 2304]	2878	[3456, 1925]	4183	[4514, 2363]
269	[509, 510]	1574	[2305, 2306]	2879	[3457, 3210]	4184	[4515, 1225]
270	[511, 512]	1575	[1175, 2307]	2880	[56, 125]	4185	[4516, 2501]
271	[513, 514]	1576	[2308, 2242]	2881	[3347, 3259]	4186	[4517, 1277]
272	[515, 516]	1577	[2309, 2310]	2882	[1507, 494]	4187	[4518, 411]
273	[517, 510]	1578	[2311, 2288]	2883	[3458, 172]	4188	[4519, 2728]
274	[518, 519]	1579	[2312, 895]	2884	[3459, 639]	4189	[4520, 4521]
275	[520, 521]	1580	[2313, 2314]	2885	[3181, 154]	4190	[4522, 3964]
276	[522, 523]	1581	[2315, 2316]	2886	[3460, 1878]	4191	[4523, 2452]
277	[524, 525]	1582	[2317, 2318]	2887	[3461, 3462]	4192	[4524, 1117]
278	[526, 158]	1583	[884, 2319]	2888	[3196, 662]	4193	[4525, 1353]
279	[527, 528]	1584	[2320, 381]	2889	[1441, 1504]	4194	[4526, 1089]
280	[529, 530]	1585	[977, 2321]	2890	[3463, 2018]	4195	[4527, 3556]
281	[531, 532]	1586	[2322, 1236]	2891	[3154, 3135]	4196	[4528, 3826]
282	[533, 534]	1587	[2323, 2324]	2892	[723, 1799]	4197	[1006, 4091]
283	[535, 536]	1588	[1201, 2325]	2893	[1735, 1633]	4198	[4529, 2468]
284	[537, 538]	1589	[2326, 2181]	2894	[2998, 1605]	4199	[4530, 2066]
285	[539, 125]	1590	[2327, 1099]	2895	[3464, 617]	4200	[4531, 1315]
286	[540, 541]	1591	[2328, 1101]	2896	[3465, 1619]	4201	[4532, 869]
287	[542, 543]	1592	[2329, 2330]	2897	[3466, 779]	4202	[4533, 4011]
288	[544, 545]	1593	[2331, 2332]	2898	[3467, 1705]	4203	[3752, 72]
289	[546, 168]	1594	[2333, 2334]	2899	[3468, 138]	4204	[4534, 2463]
290	[547, 548]	1595	[843, 933]	2900	[1825, 1585]	4205	[4535, 3645]
291	[549, 550]	1596	[2335, 2063]	2901	[3334, 509]	4206	[4536, 2622]
292	[551, 552]	1597	[2336, 2186]	2902	[3469, 3470]	4207	[4537, 4538]
293	[553, 554]	1598	[2337, 1250]	2903	[3109, 1695]	4208	[4539, 2243]
294	[555, 190]	1599	[2338, 2339]	2904	[3471, 1537]	4209	[4540, 3805]
295	[556, 557]	1600	[2242, 2340]	2905	[2991, 1841]	4210	[978, 334]
296	[558, 559]	1601	[2341, 2342]	2906	[1603, 1804]	4211	[1134, 2550]
297	[241, 560]	1602	[2343, 825]	2907	[2950, 1790]	4212	[4541, 2762]
298	[561, 562]	1603	[2344, 2345]	2908	[1619, 769]	4213	[4542, 4543]
299	[563, 564]	1604	[2346, 1111]	2909	[2920, 541]	4214	[4544, 2766]

300	[565, 517]	1605	[2347, 2348]	2910	[3472, 3219]	4215	[3952, 1273]
301	[566, 567]	1606	[2349, 2350]	2911	[3473, 775]	4216	[4545, 4546]
302	[568, 569]	1607	[2351, 2352]	2912	[3474, 2559]	4217	[4547, 4548]
303	[570, 571]	1608	[2353, 1029]	2913	[2889, 2443]	4218	[4549, 374]
304	[536, 572]	1609	[2354, 2355]	2914	[3475, 3476]	4219	[4550, 2167]
305	[573, 574]	1610	[1233, 2356]	2915	[3477, 3478]	4220	[4551, 3736]
306	[575, 576]	1611	[2277, 2357]	2916	[3479, 3480]	4221	[4552, 4114]
307	[577, 532]	1612	[423, 2358]	2917	[3481, 2582]	4222	[4553, 1131]
308	[578, 579]	1613	[2359, 2360]	2918	[1193, 3482]	4223	[4554, 1164]
309	[580, 523]	1614	[2361, 2270]	2919	[3483, 3484]	4224	[4555, 2142]
310	[581, 582]	1615	[2362, 110]	2920	[3485, 2860]	4225	[4556, 2216]
311	[583, 584]	1616	[2363, 79]	2921	[925, 2128]	4226	[4557, 1141]
312	[585, 586]	1617	[257, 1104]	2922	[3486, 1359]	4227	[4558, 4559]
313	[587, 588]	1618	[2364, 2365]	2923	[3487, 3488]	4228	[4560, 317]
314	[589, 590]	1619	[2366, 2367]	2924	[3489, 3490]	4229	[4561, 1344]
315	[591, 592]	1620	[2368, 1079]	2925	[3491, 992]	4230	[2554, 390]
316	[593, 173]	1621	[1133, 2369]	2926	[3492, 1267]	4231	[4562, 2262]
317	[594, 595]	1622	[103, 2370]	2927	[3493, 3494]	4232	[4563, 4564]
318	[36, 596]	1623	[2371, 2372]	2928	[3495, 3496]	4233	[4565, 295]
319	[38, 597]	1624	[1286, 2373]	2929	[2724, 89]	4234	[4566, 2590]
320	[598, 599]	1625	[2374, 1259]	2930	[3497, 3498]	4235	[2219, 2598]
321	[600, 178]	1626	[2375, 2376]	2931	[3499, 3500]	4236	[4567, 4568]
322	[601, 602]	1627	[2377, 2378]	2932	[3501, 3502]	4237	[4569, 3662]
323	[603, 604]	1628	[276, 2379]	2933	[3503, 3504]	4238	[4570, 4571]
324	[605, 195]	1629	[2380, 2381]	2934	[2543, 2776]	4239	[4572, 4573]
325	[606, 607]	1630	[2382, 2383]	2935	[3505, 3506]	4240	[912, 442]
326	[608, 609]	1631	[2384, 2385]	2936	[3507, 3508]	4241	[4574, 1322]
327	[610, 611]	1632	[2386, 2387]	2937	[3509, 3510]	4242	[4575, 1174]
328	[612, 613]	1633	[2281, 2388]	2938	[1270, 3511]	4243	[4576, 981]
329	[614, 528]	1634	[287, 2389]	2939	[3512, 2642]	4244	[3517, 92]
330	[615, 616]	1635	[2390, 2391]	2940	[3513, 3514]	4245	[4577, 4578]
331	[517, 617]	1636	[2392, 1354]	2941	[3515, 3516]	4246	[4579, 2778]
332	[618, 619]	1637	[317, 2393]	2942	[1132, 3517]	4247	[4580, 2239]
333	[620, 621]	1638	[2394, 2114]	2943	[3518, 3508]	4248	[4581, 4582]
334	[622, 623]	1639	[2395, 2396]	2944	[3519, 3520]	4249	[4582, 911]
335	[624, 625]	1640	[2397, 2398]	2945	[3521, 3522]	4250	[4583, 2496]
336	[626, 627]	1641	[2399, 2176]	2946	[3523, 2908]	4251	[4584, 4585]
337	[628, 629]	1642	[2400, 2401]	2947	[3524, 3525]	4252	[4586, 2420]
338	[630, 631]	1643	[2402, 2403]	2948	[327, 3526]	4253	[4587, 1164]
339	[632, 633]	1644	[243, 1061]	2949	[3527, 3528]	4254	[4588, 1183]
340	[634, 635]	1645	[2404, 2405]	2950	[3529, 3530]	4255	[4589, 2074]
341	[636, 637]	1646	[2406, 1267]	2951	[3531, 2825]	4256	[4590, 3920]
342	[189, 638]	1647	[2407, 2408]	2952	[3532, 3533]	4257	[4564, 2352]
343	[639, 640]	1648	[1070, 2409]	2953	[3534, 380]	4258	[4591, 4592]

344	[641, 628]	1649	[2410, 2411]	2954	[3535, 3536]	4259	[3488, 2484]
345	[642, 643]	1650	[2268, 2412]	2955	[3537, 2601]	4260	[4593, 2910]
346	[644, 645]	1651	[2413, 2414]	2956	[3538, 1026]	4261	[4594, 300]
347	[646, 189]	1652	[2415, 2416]	2957	[2734, 2731]	4262	[4595, 2789]
348	[647, 648]	1653	[451, 2417]	2958	[3539, 3540]	4263	[4596, 1196]
349	[649, 650]	1654	[2418, 2419]	2959	[3541, 3542]	4264	[4597, 1319]
350	[651, 652]	1655	[921, 2420]	2960	[3543, 3544]	4265	[4038, 18]
351	[653, 147]	1656	[1043, 2421]	2961	[3544, 3545]	4266	[4598, 2371]
352	[654, 655]	1657	[2372, 2422]	2962	[3546, 2068]	4267	[4599, 2734]
353	[656, 657]	1658	[2423, 2055]	2963	[3547, 2820]	4268	[4600, 896]
354	[658, 632]	1659	[2424, 2425]	2964	[3548, 918]	4269	[2885, 77]
355	[659, 660]	1660	[2426, 2427]	2965	[3549, 869]	4270	[4601, 2475]
356	[661, 662]	1661	[70, 2428]	2966	[3550, 117]	4271	[4602, 4603]
357	[60, 663]	1662	[1155, 2347]	2967	[3551, 3552]	4272	[4604, 968]
358	[664, 665]	1663	[2429, 297]	2968	[367, 1183]	4273	[4605, 4606]
359	[666, 667]	1664	[2430, 2431]	2969	[3553, 3554]	4274	[4607, 1107]
360	[668, 669]	1665	[2432, 113]	2970	[3555, 3556]	4275	[4608, 3638]
361	[670, 671]	1666	[2433, 408]	2971	[3557, 1076]	4276	[4609, 1099]
362	[672, 673]	1667	[2434, 2435]	2972	[3558, 1157]	4277	[4610, 2044]
363	[536, 674]	1668	[2436, 2437]	2973	[3559, 2331]	4278	[4611, 93]
364	[675, 676]	1669	[114, 958]	2974	[3560, 2860]	4279	[4612, 996]
365	[677, 135]	1670	[2438, 849]	2975	[3561, 3562]	4280	[1278, 1302]
366	[678, 521]	1671	[2439, 2440]	2976	[1274, 3563]	4281	[4613, 4614]
367	[679, 680]	1672	[2441, 121]	2977	[3564, 3565]	4282	[4615, 2728]
368	[681, 682]	1673	[2442, 2177]	2978	[3566, 2233]	4283	[4616, 88]
369	[532, 552]	1674	[2443, 884]	2979	[3567, 2131]	4284	[2370, 23]
370	[683, 684]	1675	[839, 2444]	2980	[2733, 3568]	4285	[4617, 3815]
371	[685, 222]	1676	[2445, 2236]	2981	[3569, 2127]	4286	[4618, 1213]
372	[686, 687]	1677	[2446, 305]	2982	[1106, 3570]	4287	[4619, 4620]
373	[688, 689]	1678	[2447, 2448]	2983	[3571, 3572]	4288	[4621, 2247]
374	[690, 640]	1679	[2449, 2450]	2984	[3573, 2773]	4289	[4622, 4526]
375	[656, 57]	1680	[2451, 2452]	2985	[3574, 3575]	4290	[3565, 2566]
376	[691, 692]	1681	[2453, 2454]	2986	[345, 3576]	4291	[4623, 78]
377	[181, 693]	1682	[2455, 2456]	2987	[3577, 1316]	4292	[4624, 4625]
378	[237, 694]	1683	[2457, 2082]	2988	[3578, 2798]	4293	[4626, 2676]
379	[695, 696]	1684	[2458, 1325]	2989	[3579, 368]	4294	[4627, 2508]
380	[697, 698]	1685	[2459, 2460]	2990	[3580, 3581]	4295	[4628, 4603]
381	[699, 700]	1686	[2461, 2462]	2991	[3582, 2890]	4296	[4629, 4630]
382	[701, 702]	1687	[2463, 2464]	2992	[3583, 2459]	4297	[4631, 2579]
383	[157, 703]	1688	[2440, 1367]	2993	[3584, 3585]	4298	[4632, 3990]
384	[704, 139]	1689	[2465, 2466]	2994	[3586, 3587]	4299	[4633, 108]
385	[705, 706]	1690	[2467, 2468]	2995	[3588, 3589]	4300	[2435, 2365]
386	[707, 708]	1691	[2469, 2449]	2996	[3590, 3591]	4301	[4634, 3474]
387	[709, 481]	1692	[2070, 2470]	2997	[3592, 1222]	4302	[4635, 3682]

388	[710, 192]	1693	[2471, 2472]	2998	[3593, 3594]	4303	[2589, 4485]
389	[711, 712]	1694	[2473, 2078]	2999	[2612, 842]	4304	[4636, 3511]
390	[713, 198]	1695	[892, 2474]	3000	[3595, 1068]	4305	[3906, 2784]
391	[714, 577]	1696	[2475, 2476]	3001	[2591, 825]	4306	[4637, 4638]
392	[715, 561]	1697	[2061, 2477]	3002	[3596, 3597]	4307	[4639, 1133]
393	[716, 717]	1698	[2478, 2479]	3003	[96, 876]	4308	[3671, 2306]
394	[718, 688]	1699	[1147, 989]	3004	[3598, 1294]	4309	[4640, 4641]
395	[719, 198]	1700	[2480, 2151]	3005	[3599, 3600]	4310	[2468, 289]
396	[720, 689]	1701	[2481, 2482]	3006	[3601, 3602]	4311	[4642, 2105]
397	[190, 721]	1702	[2483, 2484]	3007	[3603, 2543]	4312	[3770, 1226]
398	[722, 723]	1703	[2485, 2486]	3008	[291, 1150]	4313	[2579, 365]
399	[724, 656]	1704	[2068, 2487]	3009	[3604, 3605]	4314	[4643, 2260]
400	[725, 463]	1705	[2488, 2489]	3010	[3606, 874]	4315	[4644, 2213]
401	[726, 727]	1706	[2490, 446]	3011	[3607, 3608]	4316	[4645, 4646]
402	[138, 523]	1707	[2491, 294]	3012	[3609, 814]	4317	[4647, 4107]
403	[728, 729]	1708	[2492, 860]	3013	[3610, 3611]	4318	[4648, 370]
404	[730, 731]	1709	[2493, 2494]	3014	[3612, 3613]	4319	[4649, 247]
405	[172, 732]	1710	[2495, 308]	3015	[3614, 3615]	4320	[3944, 3659]
406	[733, 734]	1711	[2496, 1057]	3016	[3616, 438]	4321	[4650, 4040]
407	[735, 736]	1712	[2497, 2384]	3017	[3617, 3618]	4322	[810, 2282]
408	[737, 59]	1713	[2498, 2157]	3018	[1041, 3619]	4323	[4651, 845]
409	[574, 625]	1714	[2499, 2500]	3019	[3620, 3621]	4324	[4652, 2261]
410	[738, 739]	1715	[2501, 2502]	3020	[1055, 3622]	4325	[4653, 1154]
411	[740, 741]	1716	[2503, 2504]	3021	[2622, 3623]	4326	[2556, 2783]
412	[742, 743]	1717	[2500, 2360]	3022	[337, 3624]	4327	[4654, 4655]
413	[744, 701]	1718	[902, 1154]	3023	[3625, 3626]	4328	[4656, 1299]
414	[745, 746]	1719	[2505, 2506]	3024	[3627, 290]	4329	[4657, 2900]
415	[747, 748]	1720	[2507, 64]	3025	[3628, 3629]	4330	[1303, 448]
416	[749, 750]	1721	[2508, 2509]	3026	[122, 1167]	4331	[4658, 4659]
417	[525, 751]	1722	[2510, 2511]	3027	[3630, 269]	4332	[4660, 3621]
418	[682, 752]	1723	[2385, 2512]	3028	[2882, 3631]	4333	[1045, 2192]
419	[8, 753]	1724	[2513, 2514]	3029	[2541, 3632]	4334	[4661, 2572]
420	[56, 754]	1725	[1015, 2515]	3030	[3633, 3634]	4335	[2807, 839]
421	[755, 756]	1726	[1256, 1386]	3031	[3635, 298]	4336	[4662, 242]
422	[757, 758]	1727	[2516, 1287]	3032	[3636, 856]	4337	[2586, 1015]
423	[759, 760]	1728	[2403, 359]	3033	[3637, 2196]	4338	[4663, 3897]
424	[761, 762]	1729	[2517, 2518]	3034	[3638, 3639]	4339	[3698, 4664]
425	[553, 497]	1730	[2519, 2295]	3035	[3640, 3641]	4340	[4665, 948]
426	[503, 192]	1731	[2520, 2521]	3036	[3642, 1305]	4341	[101, 4513]
427	[763, 57]	1732	[2522, 24]	3037	[2678, 817]	4342	[4666, 3798]
428	[764, 765]	1733	[2250, 2523]	3038	[3643, 2069]	4343	[4667, 2146]
429	[766, 212]	1734	[2524, 2525]	3039	[3644, 2784]	4344	[4668, 1331]
430	[184, 767]	1735	[2526, 1016]	3040	[3645, 329]	4345	[4669, 2895]
431	[768, 769]	1736	[112, 2527]	3041	[1229, 2065]	4346	[2314, 2766]

432	[201, 471]	1737	[2528, 1374]	3042	[3646, 3647]	4347	[3885, 2490]
433	[770, 771]	1738	[2529, 2530]	3043	[3648, 1181]	4348	[2893, 862]
434	[716, 772]	1739	[2531, 2532]	3044	[3649, 2184]	4349	[4670, 2325]
435	[773, 553]	1740	[2533, 2534]	3045	[3621, 3650]	4350	[4671, 3915]
436	[774, 775]	1741	[2535, 2536]	3046	[3651, 118]	4351	[4672, 952]
437	[776, 777]	1742	[2537, 2538]	3047	[3652, 3653]	4352	[4673, 22]
438	[778, 779]	1743	[929, 2539]	3048	[3654, 3655]	4353	[4674, 4617]
439	[746, 780]	1744	[2540, 2541]	3049	[3656, 3657]	4354	[2316, 441]
440	[781, 782]	1745	[2542, 2543]	3050	[1100, 2442]	4355	[4675, 2243]
441	[783, 784]	1746	[2544, 2545]	3051	[3658, 3659]	4356	[4676, 310]
442	[785, 786]	1747	[74, 2546]	3052	[3660, 1273]	4357	[4677, 399]
443	[720, 787]	1748	[2547, 2548]	3053	[2302, 2897]	4358	[4678, 2812]
444	[788, 789]	1749	[2549, 2550]	3054	[3661, 2249]	4359	[4679, 2385]
445	[225, 790]	1750	[2551, 2552]	3055	[2534, 3662]	4360	[963, 895]
446	[791, 792]	1751	[2553, 867]	3056	[3663, 2171]	4361	[4680, 371]
447	[793, 208]	1752	[84, 2554]	3057	[3664, 3572]	4362	[4681, 3791]
448	[794, 14]	1753	[2555, 2556]	3058	[3665, 3666]	4363	[3581, 1171]
449	[795, 796]	1754	[2557, 1051]	3059	[3667, 3668]	4364	[4682, 1214]
450	[797, 798]	1755	[2558, 2559]	3060	[430, 3669]	4365	[4683, 2317]
451	[799, 650]	1756	[2560, 336]	3061	[2164, 2281]	4366	[4684, 4685]
452	[127, 138]	1757	[2142, 2561]	3062	[98, 3580]	4367	[4686, 2839]
453	[800, 657]	1758	[2562, 2563]	3063	[3670, 2656]	4368	[4687, 4688]
454	[514, 801]	1759	[405, 2564]	3064	[2174, 3671]	4369	[4689, 2651]
455	[802, 765]	1760	[2334, 2565]	3065	[3672, 1193]	4370	[4690, 2048]
456	[803, 804]	1761	[2566, 2567]	3066	[3673, 3610]	4371	[4691, 420]
457	[805, 569]	1762	[2568, 2412]	3067	[3674, 3675]	4372	[4692, 3933]
458	[806, 528]	1763	[2569, 2570]	3068	[3676, 2829]	4373	[4693, 2610]
459	[807, 808]	1764	[2571, 2572]	3069	[3677, 3678]	4374	[4694, 396]
460	[809, 810]	1765	[2573, 2574]	3070	[3679, 3680]	4375	[4695, 1198]
461	[811, 812]	1766	[2414, 2575]	3071	[3681, 957]	4376	[3496, 2396]
462	[813, 446]	1767	[2576, 2577]	3072	[3682, 955]	4377	[4696, 4646]
463	[814, 815]	1768	[2578, 2579]	3073	[3683, 2853]	4378	[2321, 76]
464	[816, 303]	1769	[297, 2580]	3074	[3684, 2394]	4379	[4697, 119]
465	[817, 818]	1770	[2581, 334]	3075	[3685, 2278]	4380	[4698, 4699]
466	[819, 820]	1771	[2582, 2583]	3076	[3686, 3687]	4381	[4700, 2478]
467	[821, 822]	1772	[2584, 85]	3077	[3688, 1271]	4382	[3881, 1010]
468	[823, 824]	1773	[2196, 87]	3078	[3689, 950]	4383	[4701, 376]
469	[825, 826]	1774	[2585, 2586]	3079	[2539, 2809]	4384	[835, 458]
470	[827, 828]	1775	[2299, 2149]	3080	[3690, 3639]	4385	[4702, 2693]
471	[829, 830]	1776	[2587, 2588]	3081	[3691, 261]	4386	[2901, 2806]
472	[831, 107]	1777	[2550, 2589]	3082	[3692, 3693]	4387	[4703, 30]
473	[832, 833]	1778	[124, 2590]	3083	[3694, 89]	4388	[4704, 2874]
474	[834, 835]	1779	[24, 2591]	3084	[3695, 3696]	4389	[860, 1221]
475	[836, 837]	1780	[2592, 2593]	3085	[3697, 3698]	4390	[4705, 3786]

476	[838, 839]	1781	[428, 995]	3086	[3699, 3700]	4391	[4706, 4707]
477	[840, 841]	1782	[2594, 980]	3087	[3701, 377]	4392	[4104, 2530]
478	[842, 843]	1783	[2595, 999]	3088	[3545, 2503]	4393	[2233, 108]
479	[844, 845]	1784	[2596, 2369]	3089	[3702, 3703]	4394	[4708, 4709]
480	[846, 344]	1785	[2597, 2598]	3090	[3704, 3705]	4395	[4710, 2655]
481	[847, 848]	1786	[1258, 2599]	3091	[2275, 3706]	4396	[4711, 4712]
482	[849, 850]	1787	[2600, 2601]	3092	[2567, 2463]	4397	[4713, 2772]
483	[851, 852]	1788	[2602, 2603]	3093	[2246, 3707]	4398	[4714, 1199]
484	[853, 854]	1789	[2604, 2195]	3094	[3708, 3709]	4399	[4715, 2227]
485	[855, 856]	1790	[2046, 2471]	3095	[1128, 3710]	4400	[4716, 4717]
486	[857, 858]	1791	[2605, 1012]	3096	[3711, 284]	4401	[4718, 3610]
487	[859, 860]	1792	[2606, 2607]	3097	[3712, 1200]	4402	[4719, 873]
488	[861, 862]	1793	[2608, 2609]	3098	[3713, 2600]	4403	[4720, 1251]
489	[863, 864]	1794	[1235, 268]	3099	[3714, 893]	4404	[4543, 3605]
490	[865, 866]	1795	[2610, 2231]	3100	[3715, 3716]	4405	[4721, 3716]
491	[867, 868]	1796	[2611, 2612]	3101	[3717, 1142]	4406	[4578, 1293]
492	[869, 870]	1797	[2613, 2614]	3102	[3718, 1209]	4407	[4722, 2169]
493	[871, 444]	1798	[2615, 254]	3103	[3719, 3720]	4408	[4723, 3514]
494	[872, 873]	1799	[2154, 2616]	3104	[3721, 3722]	4409	[4724, 868]
495	[874, 875]	1800	[1119, 2303]	3105	[1338, 28]	4410	[4725, 4471]
496	[876, 342]	1801	[2617, 93]	3106	[3723, 3724]	4411	[4726, 4712]
497	[877, 878]	1802	[2618, 2060]	3107	[3725, 2407]	4412	[4727, 2614]
498	[879, 880]	1803	[2619, 2620]	3108	[2182, 3726]	4413	[4728, 4729]
499	[881, 882]	1804	[1334, 1277]	3109	[3727, 3728]	4414	[4659, 4730]
500	[883, 884]	1805	[2621, 2622]	3110	[3729, 3730]	4415	[4731, 2390]
501	[885, 886]	1806	[2623, 2074]	3111	[3731, 1290]	4416	[4630, 3496]
502	[887, 888]	1807	[2624, 2625]	3112	[3732, 924]	4417	[4732, 3865]
503	[889, 890]	1808	[2345, 2626]	3113	[3594, 2157]	4418	[4733, 445]
504	[891, 892]	1809	[2627, 2628]	3114	[3733, 2259]	4419	[2845, 809]
505	[893, 894]	1810	[2629, 976]	3115	[3734, 3735]	4420	[4734, 3755]
506	[895, 896]	1811	[2630, 1138]	3116	[3736, 3737]	4421	[4735, 943]
507	[897, 898]	1812	[957, 2631]	3117	[2387, 973]	4422	[4736, 3599]
508	[899, 900]	1813	[2632, 2633]	3118	[3738, 2232]	4423	[4737, 2163]
509	[901, 902]	1814	[2634, 2635]	3119	[3739, 3740]	4424	[4738, 4739]
510	[903, 904]	1815	[2636, 2186]	3120	[3741, 3742]	4425	[4740, 974]
511	[905, 906]	1816	[2637, 2638]	3121	[3743, 3744]	4426	[4741, 1236]
512	[907, 908]	1817	[2639, 454]	3122	[3745, 3746]	4427	[4742, 1179]
513	[909, 910]	1818	[2640, 2641]	3123	[2389, 1250]	4428	[2835, 1209]
514	[911, 912]	1819	[2642, 877]	3124	[3747, 1192]	4429	[4743, 814]
515	[913, 914]	1820	[2643, 2644]	3125	[3748, 3749]	4430	[4744, 2170]
516	[915, 916]	1821	[2645, 2282]	3126	[3750, 3563]	4431	[4745, 428]
517	[917, 324]	1822	[2646, 2647]	3127	[2472, 3751]	4432	[4641, 1256]
518	[918, 919]	1823	[973, 2648]	3128	[1314, 3752]	4433	[4746, 3526]
519	[920, 921]	1824	[2649, 2334]	3129	[3753, 421]	4434	[4747, 4748]

520	[922, 923]	1825	[2650, 2651]	3130	[3754, 3755]	4435	[4749, 361]
521	[924, 925]	1826	[2114, 2652]	3131	[3756, 3757]	4436	[4750, 2618]
522	[926, 907]	1827	[347, 1163]	3132	[3758, 2382]	4437	[4027, 2387]
523	[247, 927]	1828	[2653, 2460]	3133	[1310, 1294]	4438	[4751, 362]
524	[928, 929]	1829	[2654, 1083]	3134	[841, 2134]	4439	[4752, 3963]
525	[930, 931]	1830	[363, 2655]	3135	[3759, 2649]	4440	[2668, 2801]
526	[932, 933]	1831	[2656, 914]	3136	[3760, 3761]	4441	[4753, 4635]
527	[934, 817]	1832	[449, 2657]	3137	[3762, 412]	4442	[4754, 820]
528	[935, 936]	1833	[2658, 2504]	3138	[3763, 3764]	4443	[4755, 323]
529	[937, 874]	1834	[2659, 2660]	3139	[3765, 3670]	4444	[4756, 4757]
530	[938, 939]	1835	[2661, 942]	3140	[3766, 2347]	4445	[1165, 4717]
531	[940, 941]	1836	[325, 2662]	3141	[2464, 3767]	4446	[4758, 3655]
532	[942, 943]	1837	[2663, 2442]	3142	[285, 961]	4447	[4759, 2718]
533	[944, 318]	1838	[2664, 2613]	3143	[2255, 2235]	4448	[4760, 3490]
534	[945, 946]	1839	[2379, 2665]	3144	[3600, 926]	4449	[4761, 1235]
535	[947, 948]	1840	[2666, 2319]	3145	[3768, 2478]	4450	[4762, 3589]
536	[949, 950]	1841	[2667, 2256]	3146	[2725, 302]	4451	[4763, 4478]
537	[951, 844]	1842	[1259, 2668]	3147	[3769, 3770]	4452	[3973, 2535]
538	[952, 953]	1843	[2669, 2670]	3148	[1032, 3771]	4453	[4764, 4073]
539	[954, 955]	1844	[2671, 2329]	3149	[3772, 1063]	4454	[4765, 4008]
540	[956, 957]	1845	[2168, 2672]	3150	[3773, 21]	4455	[484, 1964]
541	[958, 959]	1846	[2673, 1310]	3151	[3774, 307]	4456	[1831, 44]
542	[960, 961]	1847	[2674, 2289]	3152	[3775, 2523]	4457	[4766, 4767]
543	[962, 963]	1848	[2675, 1206]	3153	[3776, 2232]	4458	[3162, 1656]
544	[964, 347]	1849	[2425, 2676]	3154	[1076, 2085]	4459	[4768, 4385]
545	[965, 966]	1850	[2677, 2678]	3155	[3777, 3778]	4460	[4384, 2925]
546	[967, 968]	1851	[2679, 2085]	3156	[2412, 1248]	4461	[1564, 3381]
547	[969, 881]	1852	[2680, 923]	3157	[3779, 3632]	4462	[62, 1915]
548	[970, 971]	1853	[2681, 1023]	3158	[2880, 1197]	4463	[4769, 4770]
549	[972, 973]	1854	[2682, 2212]	3159	[3780, 3781]	4464	[41, 1572]
550	[974, 975]	1855	[2683, 1334]	3160	[3498, 899]	4465	[651, 1885]
551	[976, 977]	1856	[304, 1036]	3161	[3782, 1151]	4466	[1936, 2990]
552	[941, 978]	1857	[2684, 2685]	3162	[3783, 2138]	4467	[4771, 40]
553	[979, 980]	1858	[2686, 2687]	3163	[3784, 1094]	4468	[2980, 1523]
554	[981, 982]	1859	[2688, 2346]	3164	[3785, 2490]	4469	[1840, 2992]
555	[983, 984]	1860	[2212, 2689]	3165	[2718, 3786]	4470	[1625, 1867]
556	[985, 986]	1861	[2690, 2691]	3166	[3787, 2132]	4471	[1544, 1640]
557	[373, 987]	1862	[2692, 2251]	3167	[3788, 1212]	4472	[4772, 3266]
558	[988, 989]	1863	[2693, 2694]	3168	[3789, 2496]	4473	[4773, 4774]
559	[990, 991]	1864	[2695, 2160]	3169	[3790, 1152]	4474	[4252, 4167]
560	[992, 993]	1865	[2696, 2697]	3170	[3791, 3699]	4475	[4775, 3403]
561	[415, 994]	1866	[2698, 1028]	3171	[3792, 911]	4476	[4298, 205]
562	[995, 996]	1867	[2699, 889]	3172	[293, 3638]	4477	[2031, 1468]
563	[997, 998]	1868	[2700, 2701]	3173	[3793, 3794]	4478	[4776, 1948]

564	[999, 16]	1869	[2156, 95]	3174	[3795, 2341]	4479	[4777, 221]
565	[1000, 1001]	1870	[2702, 2703]	3175	[3796, 3586]	4480	[4451, 2030]
566	[1002, 952]	1871	[2704, 2705]	3176	[3797, 2829]	4481	[1955, 188]
567	[1003, 1004]	1872	[2706, 2499]	3177	[3798, 3799]	4482	[683, 2986]
568	[1005, 1006]	1873	[259, 2095]	3178	[3800, 3706]	4483	[4778, 4779]
569	[1007, 1008]	1874	[2707, 2708]	3179	[2563, 2326]	4484	[1805, 1786]
570	[1009, 442]	1875	[1227, 2709]	3180	[3801, 3802]	4485	[4780, 1962]
571	[1010, 1011]	1876	[2710, 2711]	3181	[3803, 249]	4486	[4781, 3004]
572	[1012, 1013]	1877	[407, 1336]	3182	[3804, 3805]	4487	[2015, 1754]
573	[1014, 1015]	1878	[2712, 2713]	3183	[3806, 3807]	4488	[4782, 3106]
574	[1016, 384]	1879	[1074, 2714]	3184	[2628, 2436]	4489	[4783, 4784]
575	[1017, 1018]	1880	[2715, 2716]	3185	[3808, 2635]	4490	[3054, 1657]
576	[265, 1019]	1881	[2717, 2718]	3186	[3809, 3810]	4491	[4785, 793]
577	[1020, 385]	1882	[2719, 2720]	3187	[3811, 452]	4492	[4786, 1445]
578	[1021, 1022]	1883	[2721, 907]	3188	[2185, 244]	4493	[4787, 1878]
579	[1023, 1024]	1884	[2722, 1214]	3189	[3812, 1129]	4494	[4788, 1522]
580	[1025, 1026]	1885	[2723, 2724]	3190	[2709, 2433]	4495	[4789, 3015]
581	[1027, 1028]	1886	[2588, 2725]	3191	[2665, 2738]	4496	[2932, 38]
582	[1029, 1030]	1887	[2726, 338]	3192	[3813, 959]	4497	[4790, 4791]
583	[1031, 1032]	1888	[2727, 2415]	3193	[3814, 3815]	4498	[4183, 1779]
584	[1033, 997]	1889	[2728, 2537]	3194	[2809, 3816]	4499	[4792, 4793]
585	[1034, 1035]	1890	[953, 2154]	3195	[3817, 3680]	4500	[2012, 1559]
586	[1036, 1037]	1891	[2729, 978]	3196	[3818, 3819]	4501	[4794, 459]
587	[1038, 1039]	1892	[2730, 2731]	3197	[3820, 809]	4502	[3100, 240]
588	[1040, 1041]	1893	[2732, 2192]	3198	[2662, 990]	4503	[4795, 1399]
589	[1042, 1043]	1894	[2355, 2733]	3199	[3821, 3607]	4504	[1521, 1455]
590	[1044, 1045]	1895	[1208, 2734]	3200	[3822, 3823]	4505	[4174, 1458]
591	[1046, 1047]	1896	[2735, 2736]	3201	[3605, 3824]	4506	[661, 1894]
592	[1047, 1048]	1897	[2737, 2738]	3202	[3825, 430]	4507	[1396, 1733]
593	[1049, 1050]	1898	[2739, 2740]	3203	[2888, 3826]	4508	[4796, 3121]
594	[1051, 1052]	1899	[2460, 2741]	3204	[3827, 3828]	4509	[4797, 2952]
595	[4, 1053]	1900	[2742, 903]	3205	[3829, 424]	4510	[3065, 1953]
596	[72, 1054]	1901	[2743, 2397]	3206	[3830, 1172]	4511	[4798, 3259]
597	[76, 1055]	1902	[2570, 1180]	3207	[3666, 903]	4512	[1782, 1541]
598	[1056, 1057]	1903	[2744, 2745]	3208	[3831, 3832]	4513	[4799, 237]
599	[1058, 1059]	1904	[2746, 1194]	3209	[3833, 337]	4514	[1487, 1531]
600	[1060, 1061]	1905	[2747, 2748]	3210	[3834, 3835]	4515	[1919, 784]
601	[1062, 1063]	1906	[2749, 1265]	3211	[830, 265]	4516	[4157, 591]
602	[1018, 1064]	1907	[2750, 2751]	3212	[3836, 2110]	4517	[4800, 1731]
603	[1065, 287]	1908	[2130, 2752]	3213	[1030, 2876]	4518	[4319, 2937]
604	[253, 1066]	1909	[2753, 2389]	3214	[1190, 3837]	4519	[4801, 3106]
605	[1067, 1068]	1910	[2754, 2755]	3215	[3838, 2625]	4520	[4802, 4803]
606	[1069, 1070]	1911	[2756, 290]	3216	[3839, 3840]	4521	[4351, 3026]
607	[420, 1067]	1912	[2757, 69]	3217	[3841, 1008]	4522	[2938, 214]

608	[1071, 1072]	1913	[2758, 2759]	3218	[3842, 2443]	4523	[3333, 799]
609	[1073, 1074]	1914	[2760, 2761]	3219	[3843, 811]	4524	[3258, 2945]
610	[1075, 1076]	1915	[2762, 1071]	3220	[3844, 2818]	4525	[3396, 550]
611	[1077, 1078]	1916	[2763, 2373]	3221	[3845, 3846]	4526	[1529, 1920]
612	[971, 1079]	1917	[2764, 2765]	3222	[3847, 3848]	4527	[1483, 1826]
613	[1080, 1081]	1918	[2766, 2767]	3223	[3849, 3850]	4528	[2965, 2014]
614	[1082, 1083]	1919	[2768, 1300]	3224	[2042, 2623]	4529	[786, 1530]
615	[1084, 1085]	1920	[2367, 2769]	3225	[3851, 870]	4530	[745, 516]
616	[1086, 1087]	1921	[2770, 899]	3226	[3852, 3853]	4531	[1770, 667]
617	[1001, 1088]	1922	[2771, 2078]	3227	[3854, 2168]	4532	[471, 1802]
618	[1089, 1090]	1923	[2772, 2773]	3228	[3855, 3856]	4533	[4804, 1639]
619	[1091, 1092]	1924	[2774, 257]	3229	[94, 1004]	4534	[4805, 1478]
620	[1093, 1094]	1925	[2775, 2776]	3230	[3857, 3858]	4535	[1434, 3084]
621	[824, 1095]	1926	[1326, 2777]	3231	[3859, 3860]	4536	[564, 717]
622	[1096, 1097]	1927	[2778, 2475]	3232	[3861, 1149]	4537	[4806, 4807]
623	[1004, 1098]	1928	[2779, 2780]	3233	[3862, 3863]	4538	[4134, 731]
624	[1099, 1100]	1929	[2781, 1233]	3234	[3864, 3865]	4539	[4808, 1435]
625	[1101, 1102]	1930	[2782, 2783]	3235	[3866, 2840]	4540	[1448, 1608]
626	[1103, 1104]	1931	[2784, 2785]	3236	[3867, 1325]	4541	[4809, 1645]
627	[1105, 1106]	1932	[2786, 2725]	3237	[3868, 2434]	4542	[4810, 4811]
628	[1097, 1107]	1933	[882, 349]	3238	[310, 2494]	4543	[1850, 1657]
629	[1098, 1108]	1934	[2787, 305]	3239	[3869, 3870]	4544	[4812, 1626]
630	[1109, 1110]	1935	[2788, 2789]	3240	[3871, 394]	4545	[4813, 4814]
631	[1111, 1112]	1936	[2790, 2353]	3241	[3872, 2317]	4546	[1830, 1490]
632	[1113, 1114]	1937	[2791, 2792]	3242	[3873, 431]	4547	[4815, 4816]
633	[16, 1115]	1938	[2793, 1047]	3243	[3874, 3875]	4548	[3176, 1926]
634	[1116, 1117]	1939	[2794, 2795]	3244	[3876, 3486]	4549	[2974, 1703]
635	[1118, 1119]	1940	[2796, 29]	3245	[3877, 2222]	4550	[1912, 1494]
636	[1120, 909]	1941	[873, 2797]	3246	[3878, 96]	4551	[4817, 4260]
637	[1121, 1122]	1942	[2798, 444]	3247	[3879, 3880]	4552	[3195, 4327]
638	[365, 1123]	1943	[2799, 853]	3248	[2214, 3881]	4553	[770, 1803]
639	[1124, 1125]	1944	[30, 2800]	3249	[3882, 284]	4554	[4788, 1458]
640	[273, 1126]	1945	[2801, 431]	3250	[3883, 2501]	4555	[1828, 174]
641	[1127, 1128]	1946	[2536, 2198]	3251	[3884, 3885]	4556	[3067, 1468]
642	[1129, 1130]	1947	[2802, 2803]	3252	[3252, 3252]	4557	[4818, 1534]
643	[1131, 1132]	1948	[1336, 2804]	3253	[2687, 3886]	4558	[3094, 629]
644	[820, 1133]	1949	[2805, 2806]	3254	[3887, 3888]	4559	[4819, 1437]
645	[1130, 1134]	1950	[2310, 2807]	3255	[3889, 3476]	4560	[3111, 1664]
646	[1135, 1136]	1951	[2318, 429]	3256	[3890, 377]	4561	[4820, 1785]
647	[1137, 1138]	1952	[2808, 2809]	3257	[3891, 3892]	4562	[4821, 1682]
648	[1139, 1140]	1953	[2810, 2811]	3258	[3893, 2476]	4563	[4822, 4823]
649	[1050, 1141]	1954	[2773, 1101]	3259	[3894, 2801]	4564	[4404, 48]
650	[1142, 1143]	1955	[2812, 366]	3260	[3895, 3600]	4565	[4233, 1903]
651	[329, 1136]	1956	[2454, 1271]	3261	[3896, 3897]	4566	[3057, 4372]

652	[1144, 1145]	1957	[2813, 2814]	3262	[300, 330]	4567	[4824, 4825]
653	[1146, 1147]	1958	[2815, 999]	3263	[3898, 2428]	4568	[3241, 1931]
654	[1148, 1149]	1959	[2816, 2817]	3264	[3899, 435]	4569	[4826, 3222]
655	[1150, 1151]	1960	[116, 847]	3265	[3900, 2173]	4570	[4827, 4828]
656	[1152, 1153]	1961	[2818, 2819]	3266	[3901, 3902]	4571	[3002, 1786]
657	[1154, 1155]	1962	[2820, 2821]	3267	[3903, 3904]	4572	[3424, 4256]
658	[1156, 1157]	1963	[2822, 2390]	3268	[2670, 3730]	4573	[1750, 1398]
659	[1158, 1159]	1964	[2823, 1226]	3269	[3905, 3906]	4574	[4829, 782]
660	[1160, 1161]	1965	[923, 2824]	3270	[3907, 3701]	4575	[4830, 4831]
661	[1162, 1163]	1966	[2273, 2825]	3271	[3908, 3728]	4576	[4340, 1792]
662	[1164, 1165]	1967	[2826, 2827]	3272	[3909, 3910]	4577	[4832, 1949]
663	[411, 1166]	1968	[1372, 2350]	3273	[3911, 3912]	4578	[3420, 1946]
664	[1167, 123]	1969	[2828, 1206]	3274	[3913, 419]	4579	[4833, 2966]
665	[1168, 1169]	1970	[1199, 2758]	3275	[3914, 3737]	4580	[4834, 676]
666	[1170, 1171]	1971	[2829, 2830]	3276	[3915, 901]	4581	[761, 789]
667	[1172, 1173]	1972	[2831, 2514]	3277	[3916, 3917]	4582	[4348, 674]
668	[1174, 1175]	1973	[118, 2832]	3278	[3918, 3919]	4583	[4835, 2996]
669	[1176, 1177]	1974	[2833, 850]	3279	[3920, 1194]	4584	[4836, 1796]
670	[1178, 1179]	1975	[2834, 2835]	3280	[3921, 270]	4585	[1898, 1631]
671	[1180, 21]	1976	[1122, 2836]	3281	[3922, 3923]	4586	[3447, 1905]
672	[1181, 1182]	1977	[2837, 2052]	3282	[3924, 243]	4587	[1417, 3042]
673	[1183, 1184]	1978	[2838, 2839]	3283	[3925, 3926]	4588	[148, 1851]
674	[948, 1185]	1979	[2840, 2841]	3284	[3927, 3928]	4589	[4837, 771]
675	[1186, 1187]	1980	[2842, 322]	3285	[3929, 326]	4590	[4838, 4839]
676	[1188, 1086]	1981	[2843, 2844]	3286	[2652, 1131]	4591	[4840, 4841]
677	[1189, 1190]	1982	[1289, 2845]	3287	[3930, 3931]	4592	[4262, 1971]
678	[1191, 854]	1983	[1345, 370]	3288	[3932, 2610]	4593	[3216, 3089]
679	[1192, 1193]	1984	[2846, 2847]	3289	[3933, 3515]	4594	[4160, 686]
680	[1194, 1195]	1985	[2848, 858]	3290	[3934, 3935]	4595	[2023, 1668]
681	[933, 1196]	1986	[2849, 2850]	3291	[3858, 1377]	4596	[4367, 1792]
682	[1197, 1198]	1987	[2851, 821]	3292	[3936, 3937]	4597	[2028, 1551]
683	[105, 1199]	1988	[2170, 2852]	3293	[2795, 355]	4598	[4842, 1554]
684	[1200, 1201]	1989	[2853, 1012]	3294	[936, 2685]	4599	[4117, 565]
685	[1202, 1203]	1990	[2854, 2855]	3295	[3938, 902]	4600	[4428, 3330]
686	[1204, 1205]	1991	[2856, 2249]	3296	[3939, 3940]	4601	[3308, 3157]
687	[1206, 1207]	1992	[2857, 2858]	3297	[2655, 2682]	4602	[3363, 2917]
688	[1205, 1208]	1993	[2859, 115]	3298	[3941, 2449]	4603	[4843, 1403]
689	[1209, 1210]	1994	[2860, 2861]	3299	[3942, 2820]	4604	[1696, 1545]
690	[1211, 962]	1995	[2862, 1217]	3300	[3943, 3944]	4605	[4844, 4845]
691	[1212, 1213]	1996	[2863, 2701]	3301	[3945, 2564]	4606	[3413, 54]
692	[1214, 1215]	1997	[2864, 2865]	3302	[3946, 3709]	4607	[3254, 489]
693	[862, 1216]	1998	[2866, 23]	3303	[3947, 2752]	4608	[4777, 685]
694	[1217, 1187]	1999	[2867, 2575]	3304	[3948, 3949]	4609	[3024, 1463]
695	[1218, 828]	2000	[2868, 2869]	3305	[3950, 1153]	4610	[4846, 2937]

696	[1219, 1010]	2001	[2870, 1023]	3306	[3951, 3952]	4611	[4210, 185]
697	[1220, 1221]	2002	[2871, 2872]	3307	[3926, 3953]	4612	[3152, 2917]
698	[1222, 1223]	2003	[2873, 2163]	3308	[3954, 336]	4613	[4847, 4848]
699	[1224, 1225]	2004	[2874, 400]	3309	[3955, 2303]	4614	[209, 3307]
700	[1226, 1227]	2005	[1153, 2453]	3310	[3956, 3701]	4615	[235, 43]
701	[1228, 1229]	2006	[2875, 2876]	3311	[3957, 3958]	4616	[4374, 1664]
702	[1230, 1231]	2007	[2877, 2576]	3312	[3959, 2150]	4617	[1897, 627]
703	[302, 1232]	2008	[2878, 2749]	3313	[3960, 123]	4618	[4849, 1534]
704	[245, 1233]	2009	[2879, 1333]	3314	[3961, 3824]	4619	[2024, 648]
705	[1234, 1235]	2010	[2767, 2880]	3315	[3962, 917]	4620	[4850, 61]
706	[1236, 1237]	2011	[2881, 2882]	3316	[3963, 1305]	4621	[4851, 539]
707	[1238, 263]	2012	[2883, 404]	3317	[3964, 1001]	4622	[4852, 1465]
708	[1239, 388]	2013	[1307, 1121]	3318	[3528, 1383]	4623	[4853, 1984]
709	[1240, 1241]	2014	[2884, 2885]	3319	[3965, 124]	4624	[4854, 4855]
710	[1242, 374]	2015	[2886, 851]	3320	[3966, 2873]	4625	[2972, 772]
711	[1243, 1244]	2016	[2887, 2888]	3321	[3967, 3860]	4626	[3232, 2000]
712	[1245, 275]	2017	[2444, 2889]	3322	[3968, 3969]	4627	[3471, 2973]
713	[1246, 424]	2018	[2890, 2040]	3323	[3970, 3888]	4628	[3434, 604]
714	[1247, 976]	2019	[2891, 2706]	3324	[3971, 2421]	4629	[4856, 4129]
715	[1248, 1249]	2020	[1068, 2892]	3325	[3972, 3973]	4630	[4209, 1469]
716	[1250, 1251]	2021	[2350, 2693]	3326	[390, 1086]	4631	[1873, 43]
717	[868, 1252]	2022	[2701, 2893]	3327	[3974, 1308]	4632	[724, 800]
718	[1253, 1254]	2023	[2894, 2895]	3328	[3975, 2100]	4633	[1666, 211]
719	[1255, 1256]	2024	[2896, 2897]	3329	[3976, 322]	4634	[4857, 3285]
720	[1257, 1258]	2025	[2898, 2173]	3330	[3977, 3978]	4635	[4858, 2034]
721	[984, 1259]	2026	[2899, 69]	3331	[1177, 2202]	4636	[4323, 1451]
722	[1260, 438]	2027	[2900, 2901]	3332	[3979, 3980]	4637	[4859, 4860]
723	[1261, 1105]	2028	[2647, 277]	3333	[3981, 2271]	4638	[1960, 3021]
724	[1262, 1263]	2029	[2902, 2903]	3334	[3982, 3983]	4639	[3357, 610]
725	[1264, 1265]	2030	[2904, 2147]	3335	[3984, 2907]	4640	[4861, 1919]
726	[1266, 458]	2031	[2905, 1230]	3336	[898, 2166]	4641	[4164, 1711]
727	[1267, 1268]	2032	[2906, 2630]	3337	[3985, 917]	4642	[2960, 1505]
728	[1269, 1270]	2033	[2907, 2908]	3338	[2552, 1018]	4643	[4448, 3084]
729	[1271, 119]	2034	[1306, 1331]	3339	[3986, 3987]	4644	[1954, 2]
730	[1064, 1272]	2035	[2909, 1337]	3340	[3716, 2518]	4645	[1511, 1447]
731	[1273, 1274]	2036	[2047, 2241]	3341	[3988, 3627]	4646	[4862, 14]
732	[1275, 1276]	2037	[2651, 2910]	3342	[3989, 3990]	4647	[4863, 1921]
733	[1277, 1278]	2038	[2911, 852]	3343	[2713, 3720]	4648	[3205, 685]
734	[1279, 1280]	2039	[2912, 145]	3344	[2373, 2381]	4649	[3385, 4217]
735	[1281, 408]	2040	[2018, 2913]	3345	[3991, 2048]	4650	[4864, 3314]
736	[1282, 1283]	2041	[2914, 2915]	3346	[3992, 919]	4651	[4293, 1903]
737	[361, 1284]	2042	[1848, 1407]	3347	[3993, 2535]	4652	[3419, 2000]
738	[1285, 1286]	2043	[2916, 739]	3348	[3994, 2465]	4653	[1638, 156]
739	[1287, 103]	2044	[2917, 2918]	3349	[3995, 3996]	4654	[4865, 2009]

740	[1288, 1289]	2045	[1904, 2919]	3350	[2189, 68]	4655	[3267, 2990]
741	[1290, 1291]	2046	[2920, 1811]	3351	[2059, 3840]	4656	[4866, 3025]
742	[1292, 1293]	2047	[240, 1528]	3352	[3997, 975]	4657	[4867, 4868]
743	[1294, 1295]	2048	[2921, 482]	3353	[3998, 3636]	4658	[4869, 3225]
744	[1157, 1230]	2049	[1523, 1454]	3354	[3886, 3999]	4659	[1542, 1946]
745	[1296, 451]	2050	[2922, 2923]	3355	[2797, 4000]	4660	[1952, 2917]
746	[1297, 314]	2051	[578, 177]	3356	[4001, 970]	4661	[3248, 2913]
747	[1298, 346]	2052	[2924, 43]	3357	[371, 1318]	4662	[3219, 153]
748	[1241, 1299]	2053	[698, 47]	3358	[4002, 2298]	4663	[1862, 1965]
749	[394, 1300]	2054	[668, 1693]	3359	[4003, 3557]	4664	[3016, 3095]
750	[1301, 901]	2055	[2925, 241]	3360	[2476, 4004]	4665	[4797, 4148]
751	[1302, 1303]	2056	[2926, 726]	3361	[2398, 1044]	4666	[4870, 1784]
752	[308, 1304]	2057	[2927, 712]	3362	[3504, 4005]	4667	[4192, 624]
753	[1305, 1306]	2058	[715, 786]	3363	[4006, 2511]	4668	[4430, 1449]
754	[66, 1307]	2059	[1715, 1441]	3364	[4007, 2454]	4669	[4383, 696]
755	[1308, 1309]	2060	[704, 523]	3365	[4008, 3552]	4670	[4871, 149]
756	[434, 1310]	2061	[2928, 1757]	3366	[4009, 4010]	4671	[3120, 3257]
757	[1311, 1132]	2062	[804, 208]	3367	[3591, 3627]	4672	[224, 1761]
758	[1312, 246]	2063	[2929, 236]	3368	[2087, 4011]	4673	[4872, 2925]
759	[1313, 1314]	2064	[2930, 1793]	3369	[4012, 1176]	4674	[4873, 4299]
760	[1315, 1316]	2065	[2931, 2013]	3370	[4013, 342]	4675	[794, 182]
761	[1317, 1318]	2066	[2932, 1695]	3371	[2117, 1159]	4676	[3288, 802]
762	[1319, 1320]	2067	[516, 1653]	3372	[4014, 4015]	4677	[4276, 702]
763	[1321, 1322]	2068	[1729, 799]	3373	[4016, 1275]	4678	[4874, 678]
764	[1323, 1324]	2069	[1464, 137]	3374	[4017, 4018]	4679	[4359, 1905]
765	[1325, 1326]	2070	[2933, 1918]	3375	[455, 808]	4680	[4130, 493]
766	[1327, 242]	2071	[2934, 2935]	3376	[894, 3912]	4681	[3452, 461]
767	[1324, 1328]	2072	[2936, 2937]	3377	[4019, 3618]	4682	[1980, 606]
768	[1329, 1330]	2073	[2938, 60]	3378	[4020, 2444]	4683	[4875, 764]
769	[1331, 1332]	2074	[2939, 46]	3379	[4021, 3928]	4684	[1849, 153]
770	[1333, 1334]	2075	[771, 1604]	3380	[4022, 4023]	4685	[4876, 2999]
771	[1335, 1336]	2076	[570, 1872]	3381	[4024, 2722]	4686	[4826, 3442]
772	[1337, 1338]	2077	[2940, 554]	3382	[4025, 1257]	4687	[1985, 3114]
773	[1339, 981]	2078	[1910, 2941]	3383	[323, 2043]	4688	[4424, 475]
774	[333, 1203]	2079	[1793, 2942]	3384	[4026, 4027]	4689	[3142, 1932]
775	[1340, 1341]	2080	[1930, 512]	3385	[4028, 1128]	4690	[2981, 1454]
776	[1342, 1343]	2081	[128, 619]	3386	[2548, 1370]	4691	[744, 1735]
777	[263, 1096]	2082	[2942, 2943]	3387	[4029, 2909]	4692	[4877, 3139]
778	[1344, 1345]	2083	[1460, 1427]	3388	[4030, 2434]	4693	[733, 665]
779	[1346, 1347]	2084	[459, 621]	3389	[4031, 4032]	4694	[4408, 1541]
780	[914, 1348]	2085	[2944, 1489]	3390	[4033, 2901]	4695	[4345, 468]
781	[357, 1349]	2086	[2945, 1741]	3391	[4034, 3819]	4696	[4143, 1577]
782	[1350, 1351]	2087	[562, 1488]	3392	[4035, 4023]	4697	[4878, 3167]
783	[1352, 1353]	2088	[1677, 526]	3393	[2872, 3513]	4698	[4879, 1598]

784	[1354, 1355]	2089	[2946, 534]	3394	[4036, 4037]	4699	[615, 535]
785	[1356, 1357]	2090	[2947, 1423]	3395	[1037, 4038]	4700	[3242, 4238]
786	[380, 1358]	2091	[2948, 2949]	3396	[4039, 2070]	4701	[647, 1401]
787	[1359, 1360]	2092	[217, 660]	3397	[4040, 4041]	4702	[3378, 1765]
788	[1361, 990]	2093	[2950, 672]	3398	[4042, 2855]	4703	[4880, 619]
789	[1022, 1362]	2094	[2951, 2952]	3399	[4043, 2714]	4704	[4881, 4882]
790	[1363, 1364]	2095	[489, 693]	3400	[4044, 2465]	4705	[4883, 3085]
791	[1365, 1366]	2096	[2953, 2954]	3401	[4045, 3923]	4706	[4884, 4862]
792	[1367, 1368]	2097	[2955, 1466]	3402	[4046, 3571]	4707	[3158, 159]
793	[1369, 1370]	2098	[2956, 1609]	3403	[4047, 1378]	4708	[4885, 4886]
794	[1371, 1372]	2099	[1911, 1656]	3404	[4048, 1077]	4709	[3428, 169]
795	[1373, 935]	2100	[527, 1630]	3405	[1251, 3675]	4710	[4887, 1546]
796	[1374, 1375]	2101	[2957, 2958]	3406	[1366, 3864]	4711	[2984, 508]
797	[1376, 1377]	2102	[1578, 237]	3407	[4049, 2222]	4712	[4270, 1695]
798	[1378, 1379]	2103	[1440, 1716]	3408	[4050, 893]	4713	[4888, 3404]
799	[359, 1380]	2104	[2959, 1674]	3409	[4051, 77]	4714	[4343, 1735]
800	[1381, 1382]	2105	[2960, 1675]	3410	[4052, 2182]	4715	[4399, 1703]
801	[1383, 1384]	2106	[1505, 2961]	3411	[4053, 1254]	4716	[1795, 1907]
802	[1385, 1386]	2107	[2962, 545]	3412	[4054, 2458]	4717	[3186, 1836]
803	[1387, 1155]	2108	[2963, 493]	3413	[4055, 2791]	4718	[4122, 1894]
804	[1388, 956]	2109	[2927, 2964]	3414	[4056, 2251]	4719	[4889, 1639]
805	[1389, 1390]	2110	[753, 2033]	3415	[4057, 2167]	4720	[4363, 185]
806	[1391, 1392]	2111	[2965, 2966]	3416	[4058, 3518]	4721	[781, 3349]
807	[1393, 1394]	2112	[2967, 760]	3417	[886, 2882]	4722	[3066, 1826]
808	[1395, 1396]	2113	[2968, 2969]	3418	[4059, 1160]	4723	[3027, 1930]
809	[1397, 1398]	2114	[2970, 1747]	3419	[4060, 2436]	4724	[4890, 734]
810	[1399, 1400]	2115	[1604, 1948]	3420	[4061, 1363]	4725	[4891, 4892]
811	[1401, 1402]	2116	[2971, 1414]	3421	[4062, 829]	4726	[1618, 768]
812	[1403, 1404]	2117	[2972, 717]	3422	[4063, 450]	4727	[4893, 1959]
813	[1405, 793]	2118	[1536, 2973]	3423	[4064, 4065]	4728	[4894, 4895]
814	[1406, 1407]	2119	[585, 505]	3424	[4066, 3983]	4729	[4147, 645]
815	[1408, 752]	2120	[2974, 2975]	3425	[4067, 366]	4730	[4896, 179]
816	[1409, 782]	2121	[2976, 2977]	3426	[2819, 3607]	4731	[4152, 1526]
817	[1410, 1411]	2122	[568, 2941]	3427	[4068, 3949]	4732	[3161, 468]
818	[671, 1412]	2123	[180, 489]	3428	[2422, 4069]	4733	[4897, 133]
819	[1413, 1414]	2124	[2978, 532]	3429	[2844, 3708]	4734	[4173, 1908]
820	[673, 669]	2125	[1456, 1908]	3430	[4070, 4071]	4735	[4898, 3266]
821	[1415, 496]	2126	[1458, 1523]	3431	[4072, 4073]	4736	[4899, 4900]
822	[748, 1416]	2127	[2979, 506]	3432	[3730, 2489]	4737	[4901, 1429]
823	[1417, 1418]	2128	[2980, 1767]	3433	[4074, 1227]	4738	[3221, 3442]
824	[1419, 1420]	2129	[2981, 1399]	3434	[4075, 3964]	4739	[4858, 1697]
825	[1421, 1422]	2130	[1767, 1454]	3435	[4076, 2382]	4740	[3105, 3023]
826	[489, 1423]	2131	[2982, 2983]	3436	[4077, 4078]	4741	[561, 1530]
827	[1424, 1425]	2132	[1908, 1458]	3437	[4079, 253]	4742	[3314, 543]

828	[1426, 1427]	2133	[132, 1574]	3438	[4080, 2287]	4743	[159, 1408]
829	[155, 1428]	2134	[1443, 1856]	3439	[3480, 326]	4744	[4332, 795]
830	[1429, 799]	2135	[725, 233]	3440	[4081, 4082]	4745	[3437, 1654]
831	[1430, 1429]	2136	[2984, 1860]	3441	[4083, 877]	4746	[1497, 36]
832	[1431, 1432]	2137	[2985, 1531]	3442	[4084, 4085]	4747	[1655, 60]
833	[1433, 1408]	2138	[179, 2986]	3443	[2075, 1392]	4748	[4902, 1404]
834	[1434, 1435]	2139	[2987, 2988]	3444	[4086, 4087]	4749	[3198, 610]
835	[159, 682]	2140	[2989, 2990]	3445	[4088, 2566]	4750	[127, 704]
836	[1436, 1437]	2141	[2991, 2992]	3446	[4089, 2519]	4751	[4903, 782]
837	[188, 700]	2142	[1437, 1849]	3447	[4090, 3687]	4752	[4904, 4905]
838	[1438, 1439]	2143	[1854, 507]	3448	[4091, 3843]	4753	[4906, 4234]
839	[1440, 1441]	2144	[2993, 2994]	3449	[4092, 3753]	4754	[4203, 790]
840	[1442, 1443]	2145	[2995, 2996]	3450	[3928, 2341]	4755	[4907, 1841]
841	[1444, 762]	2146	[1794, 2943]	3451	[4093, 4094]	4756	[4908, 3171]
842	[1445, 517]	2147	[2997, 777]	3452	[4095, 1290]	4757	[4230, 59]
843	[1446, 1447]	2148	[2983, 2983]	3453	[3761, 898]	4758	[3399, 1664]
844	[1448, 190]	2149	[2998, 1492]	3454	[4096, 448]	4759	[4240, 493]
845	[1449, 469]	2150	[1528, 560]	3455	[856, 992]	4760	[4796, 3257]
846	[1450, 1451]	2151	[1953, 2918]	3456	[4097, 1326]	4761	[3160, 507]
847	[1452, 197]	2152	[61, 2999]	3457	[4098, 1087]	4762	[2959, 1504]
848	[549, 1453]	2153	[3000, 696]	3458	[4099, 1275]	4763	[4283, 516]
849	[1454, 1455]	2154	[1604, 1808]	3459	[4100, 120]	4764	[4909, 3332]
850	[482, 1456]	2155	[626, 131]	3460	[4101, 2345]	4765	[4910, 4911]
851	[1457, 1456]	2156	[3001, 1845]	3461	[4102, 3515]	4766	[3728, 3926]
852	[506, 1458]	2157	[3002, 1806]	3462	[4103, 2326]	4767	[4912, 4913]
853	[1459, 1460]	2158	[2939, 3003]	3463	[1355, 4104]	4768	[255, 3863]
854	[1461, 623]	2159	[3004, 1647]	3464	[3703, 2634]	4769	[4914, 2827]
855	[1462, 1463]	2160	[2915, 1856]	3465	[4105, 2477]	4770	[4915, 4916]
856	[1464, 543]	2161	[3005, 3006]	3466	[4106, 1160]	4771	[2761, 2277]
857	[544, 526]	2162	[3007, 698]	3467	[4107, 1257]	4772	[815, 1286]
858	[1465, 1466]	2163	[1651, 3008]	3468	[4108, 270]	4773	[4917, 450]
859	[1467, 1468]	2164	[1429, 649]	3469	[4109, 2144]	4774	[4918, 4919]
860	[1469, 1470]	2165	[3009, 45]	3470	[4110, 4111]	4775	[3940, 1105]
861	[1471, 229]	2166	[3010, 631]	3471	[4112, 1346]	4776	[2574, 872]
862	[1472, 1473]	2167	[738, 1481]	3472	[4113, 395]	4777	[3904, 82]
863	[1474, 1475]	2168	[639, 3011]	3473	[4114, 423]	4778	[3587, 2066]
864	[474, 1476]	2169	[3012, 1962]	3474	[3273, 1950]	4779	[4920, 4921]
865	[1477, 1478]	2170	[1826, 3013]	3475	[4115, 45]	4780	[4922, 3682]
866	[643, 645]	2171	[1978, 1933]	3476	[2985, 1488]	4781	[2769, 4466]
867	[1479, 1480]	2172	[491, 564]	3477	[1621, 1855]	4782	[4923, 2563]
868	[1481, 1482]	2173	[224, 1585]	3478	[4116, 3429]	4783	[4924, 2169]
869	[1483, 157]	2174	[1705, 720]	3479	[4117, 1445]	4784	[4925, 4926]
870	[1484, 616]	2175	[3014, 1659]	3480	[1496, 669]	4785	[4927, 114]
871	[1485, 1486]	2176	[3015, 2003]	3481	[1877, 4118]	4786	[3536, 3594]

872	[1487, 1488]	2177	[1887, 602]	3482	[1619, 1637]	4787	[3737, 2620]
873	[632, 753]	2178	[3016, 629]	3483	[4119, 4120]	4788	[2509, 2576]
874	[1489, 1490]	2179	[3017, 1538]	3484	[1868, 1918]	4789	[4928, 2873]
875	[1491, 1492]	2180	[504, 586]	3485	[4121, 154]	4790	[4929, 1223]
876	[1493, 1494]	2181	[1964, 1863]	3486	[4122, 662]	4791	[4930, 360]
877	[599, 1495]	2182	[3018, 1899]	3487	[4123, 4124]	4792	[382, 3764]
878	[672, 1496]	2183	[748, 179]	3488	[3200, 61]	4793	[4931, 2899]
879	[1497, 1498]	2184	[3019, 1760]	3489	[697, 201]	4794	[2577, 2119]
880	[1499, 672]	2185	[2945, 3020]	3490	[4125, 3108]	4795	[1173, 4494]
881	[1500, 649]	2186	[1786, 3021]	3491	[4126, 1651]	4796	[4932, 2409]
882	[211, 1501]	2187	[1822, 743]	3492	[3346, 222]	4797	[4933, 994]
883	[1502, 1503]	2188	[3022, 3023]	3493	[4127, 3208]	4798	[4934, 1055]
884	[1504, 1505]	2189	[1444, 789]	3494	[4128, 482]	4799	[4935, 1349]
885	[1506, 1507]	2190	[550, 1692]	3495	[1462, 3025]	4800	[4936, 853]
886	[1508, 1509]	2191	[3024, 3025]	3496	[4129, 1721]	4801	[3619, 1372]
887	[1510, 550]	2192	[1535, 1631]	3497	[4130, 231]	4802	[4937, 2149]
888	[1511, 465]	2193	[487, 1473]	3498	[4131, 1528]	4803	[4938, 4939]
889	[1512, 154]	2194	[1609, 512]	3499	[3360, 211]	4804	[833, 2541]
890	[1513, 1514]	2195	[2999, 3026]	3500	[760, 1931]	4805	[3705, 1016]
891	[1515, 1516]	2196	[1887, 174]	3501	[3032, 646]	4806	[4940, 822]
892	[1517, 541]	2197	[3027, 1609]	3502	[4132, 1882]	4807	[4941, 4021]
893	[1518, 1519]	2198	[487, 3028]	3503	[4133, 603]	4808	[4942, 449]
894	[1520, 463]	2199	[3029, 3030]	3504	[4134, 3393]	4809	[4943, 346]
895	[1521, 1400]	2200	[3031, 1476]	3505	[4135, 4136]	4810	[4944, 2668]
896	[1522, 1523]	2201	[3032, 188]	3506	[3377, 495]	4811	[4945, 4946]
897	[1524, 200]	2202	[721, 1592]	3507	[4137, 1701]	4812	[4947, 2295]
898	[1525, 1526]	2203	[3033, 133]	3508	[3112, 1769]	4813	[4948, 970]
899	[1527, 1415]	2204	[125, 595]	3509	[4138, 4139]	4814	[4949, 2760]
900	[1528, 779]	2205	[3034, 3035]	3510	[1627, 1533]	4815	[2814, 246]
901	[1529, 784]	2206	[1739, 532]	3511	[1930, 1610]	4816	[4950, 4747]
902	[1530, 1531]	2207	[1716, 1504]	3512	[695, 599]	4817	[1244, 2582]
903	[1532, 1533]	2208	[1675, 2961]	3513	[3164, 1601]	4818	[4951, 2174]
904	[1534, 1535]	2209	[3036, 632]	3514	[4140, 595]	4819	[4952, 3843]
905	[1536, 1537]	2210	[3037, 1744]	3515	[4141, 193]	4820	[4953, 4582]
906	[1538, 1539]	2211	[1670, 3038]	3516	[758, 1794]	4821	[4954, 2293]
907	[1540, 703]	2212	[633, 2033]	3517	[170, 687]	4822	[4955, 949]
908	[1541, 177]	2213	[473, 1937]	3518	[4142, 1656]	4823	[4956, 4957]
909	[1542, 225]	2214	[592, 592]	3519	[1829, 1744]	4824	[4958, 2719]
910	[1543, 238]	2215	[803, 793]	3520	[1814, 169]	4825	[4959, 3976]
911	[1544, 1545]	2216	[3039, 1875]	3521	[4143, 1599]	4826	[4960, 2067]
912	[1546, 720]	2217	[1524, 1486]	3522	[531, 551]	4827	[4000, 2521]
913	[1547, 1513]	2218	[3040, 1546]	3523	[2946, 3339]	4828	[4961, 4962]
914	[1548, 1549]	2219	[1968, 220]	3524	[3134, 3155]	4829	[4963, 2288]
915	[1550, 1551]	2220	[3041, 3042]	3525	[1838, 1937]	4830	[4964, 2660]

916	[1552, 1553]	2221	[3043, 1777]	3526	[4144, 698]	4831	[4965, 4966]
917	[1554, 1555]	2222	[3044, 1412]	3527	[4145, 761]	4832	[2208, 2310]
918	[1556, 1557]	2223	[1738, 3045]	3528	[3145, 2034]	4833	[4967, 912]
919	[1558, 1559]	2224	[3046, 3047]	3529	[4146, 1429]	4834	[4968, 455]
920	[1560, 1561]	2225	[3048, 3049]	3530	[4147, 706]	4835	[4969, 1046]
921	[1562, 1563]	2226	[791, 3050]	3531	[2951, 4148]	4836	[4970, 2394]
922	[1564, 1394]	2227	[723, 230]	3532	[4149, 4150]	4837	[4971, 2346]
923	[1565, 1566]	2228	[1576, 1599]	3533	[677, 1679]	4838	[4972, 3500]
924	[1567, 1568]	2229	[485, 1965]	3534	[3337, 1605]	4839	[4973, 4974]
925	[1457, 483]	2230	[1846, 3051]	3535	[4151, 4152]	4840	[4975, 1029]
926	[1569, 198]	2231	[3052, 730]	3536	[4153, 496]	4841	[4976, 3967]
927	[467, 644]	2232	[3053, 1994]	3537	[3212, 610]	4842	[2685, 916]
928	[1570, 558]	2233	[3054, 1622]	3538	[1807, 1498]	4843	[4977, 1090]
929	[1571, 1572]	2234	[1974, 1580]	3539	[4154, 4155]	4844	[4978, 4730]
930	[194, 1573]	2235	[1741, 3055]	3540	[3451, 1667]	4845	[4979, 2650]
931	[1574, 1575]	2236	[3056, 1839]	3541	[3463, 3088]	4846	[4980, 2332]
932	[1576, 1577]	2237	[1583, 2017]	3542	[4156, 2017]	4847	[4981, 4078]
933	[1578, 1543]	2238	[1963, 1634]	3543	[1714, 2961]	4848	[4982, 2863]
934	[1579, 1580]	2239	[1946, 790]	3544	[4157, 592]	4849	[4983, 2678]
935	[1581, 1582]	2240	[3057, 3058]	3545	[2961, 1717]	4850	[4984, 1278]
936	[1505, 1583]	2241	[1781, 561]	3546	[4158, 3236]	4851	[1343, 407]
937	[1584, 1585]	2242	[34, 3028]	3547	[4131, 241]	4852	[4985, 3886]
938	[1586, 1587]	2243	[3059, 3060]	3548	[4159, 1558]	4853	[1237, 984]
939	[1588, 1589]	2244	[182, 1968]	3549	[4160, 170]	4854	[4986, 2536]
940	[1590, 1591]	2245	[3061, 701]	3550	[722, 229]	4855	[4987, 4988]
941	[191, 1592]	2246	[3062, 3063]	3551	[3091, 1964]	4856	[4989, 2508]
942	[1593, 704]	2247	[1534, 3064]	3552	[1559, 3307]	4857	[4990, 2634]
943	[739, 1482]	2248	[3065, 2917]	3553	[4161, 3090]	4858	[2102, 3937]
944	[1594, 1432]	2249	[3066, 157]	3554	[3147, 1752]	4859	[4991, 4748]
945	[1595, 1596]	2250	[1744, 1447]	3555	[4162, 4163]	4860	[4992, 3661]
946	[1597, 10]	2251	[3067, 1557]	3556	[167, 1648]	4861	[2319, 2367]
947	[1598, 563]	2252	[3068, 3069]	3557	[4164, 605]	4862	[4993, 3624]
948	[1599, 1600]	2253	[3070, 190]	3558	[514, 187]	4863	[315, 2213]
949	[1424, 1601]	2254	[3071, 1703]	3559	[4165, 4166]	4864	[4994, 4573]
950	[602, 175]	2255	[685, 671]	3560	[3046, 4167]	4865	[4995, 1044]
951	[1602, 1449]	2256	[788, 762]	3561	[4168, 4169]	4866	[425, 4109]
952	[1603, 1604]	2257	[3072, 3073]	3562	[805, 2941]	4867	[4996, 2487]
953	[750, 1605]	2258	[3074, 1673]	3563	[4170, 1481]	4868	[4997, 4998]
954	[1606, 606]	2259	[1758, 14]	3564	[4171, 1720]	4869	[4999, 4688]
955	[1607, 525]	2260	[3075, 780]	3565	[641, 1890]	4870	[1048, 2200]
956	[555, 1608]	2261	[3076, 1733]	3566	[3116, 56]	4871	[3810, 2419]
957	[1609, 1610]	2262	[1797, 62]	3567	[2979, 1908]	4872	[4739, 2647]
958	[1569, 1611]	2263	[644, 706]	3568	[4172, 2983]	4873	[5000, 1100]
959	[222, 1612]	2264	[153, 206]	3569	[2921, 1457]	4874	[3572, 924]

960	[1613, 1614]	2265	[3077, 2014]	3570	[4173, 506]	4875	[3657, 356]
961	[538, 479]	2266	[3078, 181]	3571	[4174, 1522]	4876	[4962, 2762]
962	[1615, 1616]	2267	[1720, 736]	3572	[1455, 1457]	4877	[5001, 4664]
963	[506, 1522]	2268	[3079, 1723]	3573	[3271, 1928]	4878	[5002, 2125]
964	[1617, 603]	2269	[498, 1519]	3574	[2928, 576]	4879	[3764, 3636]
965	[1618, 1619]	2270	[1525, 1407]	3575	[4175, 143]	4880	[975, 2054]
966	[1620, 748]	2271	[3080, 10]	3576	[628, 3095]	4881	[5003, 2814]
967	[1621, 507]	2272	[3081, 3082]	3577	[4176, 1713]	4882	[5004, 5005]
968	[10, 1490]	2273	[490, 563]	3578	[4177, 4148]	4883	[5006, 4503]
969	[1482, 1622]	2274	[3083, 3084]	3579	[4178, 3243]	4884	[3865, 352]
970	[1623, 1624]	2275	[646, 700]	3580	[4179, 1842]	4885	[5007, 2841]
971	[1469, 193]	2276	[2007, 3085]	3581	[3157, 602]	4886	[5008, 4482]
972	[1625, 1626]	2277	[3086, 3087]	3582	[4180, 145]	4887	[2462, 1205]
973	[1627, 1628]	2278	[1763, 2990]	3583	[4181, 3220]	4888	[1011, 1319]
974	[1629, 1630]	2279	[3088, 1715]	3584	[3323, 572]	4889	[3958, 303]
975	[236, 44]	2280	[500, 3089]	3585	[4182, 1741]	4890	[2803, 2612]
976	[1631, 679]	2281	[3008, 1766]	3586	[4183, 3214]	4891	[5009, 3944]
977	[228, 150]	2282	[3090, 586]	3587	[726, 743]	4892	[5010, 5011]
978	[1591, 624]	2283	[1400, 482]	3588	[4184, 652]	4893	[3576, 866]
979	[1632, 1633]	2284	[3091, 485]	3589	[4185, 2018]	4894	[5012, 395]
980	[1634, 1635]	2285	[3092, 3093]	3590	[4186, 1892]	4895	[5013, 5014]
981	[1636, 1637]	2286	[3094, 3095]	3591	[1871, 571]	4896	[5015, 1200]
982	[1543, 694]	2287	[793, 1669]	3592	[4187, 3047]	4897	[5016, 1175]
983	[1638, 1639]	2288	[756, 151]	3593	[612, 1645]	4898	[2720, 3480]
984	[597, 1640]	2289	[3096, 210]	3594	[4152, 1407]	4899	[5017, 1197]
985	[1641, 1642]	2290	[3097, 3098]	3595	[1471, 723]	4900	[5018, 5019]
986	[1643, 481]	2291	[3099, 751]	3596	[3376, 726]	4901	[5020, 1050]
987	[181, 1423]	2292	[3100, 2925]	3597	[1466, 1572]	4902	[4921, 2719]
988	[1644, 1645]	2293	[564, 772]	3598	[2038, 2964]	4903	[4664, 1217]
989	[1646, 1647]	2294	[3101, 2029]	3599	[3329, 220]	4904	[5021, 4485]
990	[607, 1648]	2295	[3102, 688]	3600	[631, 495]	4905	[5022, 5023]
991	[509, 617]	2296	[1796, 61]	3601	[4188, 4189]	4906	[5024, 2278]
992	[1649, 1650]	2297	[3103, 1451]	3602	[3092, 1667]	4907	[5025, 3880]
993	[1651, 1652]	2298	[3104, 1773]	3603	[4190, 1851]	4908	[2593, 909]
994	[746, 1653]	2299	[2925, 1528]	3604	[4191, 32]	4909	[1213, 3530]
995	[1654, 604]	2300	[3105, 3106]	3605	[4192, 574]	4910	[5026, 268]
996	[765, 767]	2301	[526, 1704]	3606	[4193, 1491]	4911	[5027, 5028]
997	[1655, 214]	2302	[507, 1860]	3607	[4194, 1692]	4912	[5029, 5030]
998	[1656, 150]	2303	[3107, 3108]	3608	[599, 2020]	4913	[3368, 1572]
999	[1482, 1657]	2304	[1790, 1496]	3609	[1927, 3272]	4914	[5031, 1719]
1000	[1658, 1659]	2305	[598, 696]	3610	[3119, 3050]	4915	[5032, 5033]
1001	[1660, 1661]	2306	[3109, 38]	3611	[2966, 729]	4916	[4452, 1640]
1002	[1662, 750]	2307	[3110, 1494]	3612	[4195, 1855]	4917	[5034, 501]
1003	[1663, 1664]	2308	[3111, 3112]	3613	[4196, 1604]	4918	[5035, 4318]

1004	[1665, 800]	2309	[3113, 3114]	3614	[3191, 1654]	4919	[3137, 59]
1005	[1666, 32]	2310	[3115, 1553]	3615	[1588, 4197]	4920	[5036, 1406]
1006	[1628, 1667]	2311	[3116, 539]	3616	[742, 727]	4921	[1800, 1711]
1007	[1480, 1668]	2312	[3117, 1418]	3617	[4198, 1414]	4922	[3331, 2969]
1008	[804, 1669]	2313	[3118, 3119]	3618	[4199, 3003]	4923	[580, 139]
1009	[1670, 1671]	2314	[1683, 460]	3619	[3426, 1973]	4924	[5037, 4163]
1010	[1672, 1673]	2315	[3120, 3121]	3620	[797, 604]	4925	[5038, 2932]
1011	[1674, 1675]	2316	[616, 536]	3621	[4200, 692]	4926	[1748, 159]
1012	[1676, 1423]	2317	[3122, 208]	3622	[1932, 576]	4927	[4771, 1569]
1013	[698, 471]	2318	[764, 184]	3623	[1446, 465]	4928	[5039, 1651]
1014	[1677, 545]	2319	[2913, 1716]	3624	[4201, 187]	4929	[5040, 3173]
1015	[1678, 1679]	2320	[57, 2005]	3625	[4202, 3353]	4930	[5041, 5042]
1016	[1680, 736]	2321	[679, 1723]	3626	[2997, 1616]	4931	[5043, 136]
1017	[1681, 1682]	2322	[3123, 1959]	3627	[4203, 226]	4932	[4314, 4238]
1018	[1683, 621]	2323	[3124, 3125]	3628	[4204, 4205]	4933	[4243, 3442]
1019	[799, 143]	2324	[581, 1592]	3629	[1987, 3190]	4934	[3211, 1932]
1020	[1684, 764]	2325	[3126, 538]	3630	[3465, 768]	4935	[3268, 33]
1021	[1685, 1439]	2326	[3127, 3128]	3631	[3259, 1741]	4936	[3375, 3236]
1022	[1686, 1687]	2327	[1566, 192]	3632	[2955, 1571]	4937	[5044, 3058]
1023	[1688, 625]	2328	[3033, 1574]	3633	[4206, 4207]	4938	[5045, 1995]
1024	[648, 1689]	2329	[3129, 1968]	3634	[1620, 178]	4939	[3300, 2033]
1025	[1690, 559]	2330	[1933, 674]	3635	[4208, 4148]	4940	[5046, 1645]
1026	[1691, 1692]	2331	[2916, 1481]	3636	[4209, 192]	4941	[5047, 5048]
1027	[673, 1693]	2332	[3130, 1799]	3637	[4210, 172]	4942	[4808, 3084]
1028	[1694, 463]	2333	[1594, 1818]	3638	[552, 1585]	4943	[3001, 1668]
1029	[1695, 1696]	2334	[3131, 3045]	3639	[4211, 2994]	4944	[5049, 4163]
1030	[1697, 1698]	2335	[3132, 1629]	3640	[4212, 4213]	4945	[5050, 794]
1031	[1699, 1414]	2336	[3133, 1822]	3641	[3392, 731]	4946	[3086, 1648]
1032	[133, 1575]	2337	[55, 539]	3642	[1852, 1964]	4947	[1969, 686]
1033	[1700, 1701]	2338	[3134, 3135]	3643	[4214, 2933]	4948	[5051, 3025]
1034	[1702, 1703]	2339	[3136, 590]	3644	[3458, 185]	4949	[5052, 5053]
1035	[1396, 679]	2340	[3112, 741]	3645	[4153, 553]	4950	[5054, 3067]
1036	[545, 1704]	2341	[3137, 2938]	3646	[4215, 4216]	4951	[1662, 1491]
1037	[1705, 688]	2342	[700, 692]	3647	[3364, 1563]	4952	[3192, 1401]
1038	[1706, 1707]	2343	[3078, 489]	3648	[1450, 4217]	4953	[5055, 133]
1039	[1400, 1457]	2344	[1658, 3138]	3649	[1921, 1747]	4954	[4338, 44]
1040	[1708, 1709]	2345	[3139, 1926]	3650	[2917, 3194]	4955	[5056, 1841]
1041	[1467, 1557]	2346	[3140, 1920]	3651	[4218, 3183]	4956	[5057, 1448]
1042	[1710, 1432]	2347	[3141, 235]	3652	[4219, 4220]	4957	[1834, 2943]
1043	[1648, 1711]	2348	[1826, 703]	3653	[3237, 1533]	4958	[5058, 1870]
1044	[1712, 1535]	2349	[3142, 575]	3654	[4221, 173]	4959	[5059, 5060]
1045	[1713, 487]	2350	[1713, 34]	3655	[4222, 642]	4960	[4263, 1818]
1046	[1714, 1583]	2351	[3143, 686]	3656	[4223, 661]	4961	[5061, 3140]
1047	[1715, 1716]	2352	[218, 3144]	3657	[213, 60]	4962	[773, 496]

1048	[1583, 1717]	2353	[3145, 1697]	3658	[2956, 1930]	4963	[3053, 1812]
1049	[1718, 1719]	2354	[3146, 1642]	3659	[1998, 800]	4964	[5062, 1975]
1050	[1720, 1721]	2355	[3147, 3148]	3660	[4224, 1932]	4965	[5063, 2978]
1051	[542, 137]	2356	[1599, 3108]	3661	[3316, 772]	4966	[1951, 3055]
1052	[1722, 1723]	2357	[1453, 1692]	3662	[1498, 596]	4967	[4195, 507]
1053	[8, 633]	2358	[758, 2942]	3663	[4208, 2952]	4968	[1827, 3110]
1054	[141, 640]	2359	[3149, 1439]	3664	[4225, 1418]	4969	[1502, 1475]
1055	[149, 1634]	2360	[1674, 1505]	3665	[4226, 1532]	4970	[2978, 551]
1056	[1724, 141]	2361	[3150, 3080]	3666	[735, 1721]	4971	[1411, 1697]
1057	[624, 1725]	2362	[1702, 2975]	3667	[1550, 2029]	4972	[1624, 1622]
1058	[1726, 1503]	2363	[3151, 158]	3668	[4205, 1839]	4973	[5064, 5065]
1059	[1727, 1687]	2364	[3152, 1953]	3669	[1401, 1689]	4974	[2993, 3144]
1060	[1728, 1729]	2365	[3153, 625]	3670	[4227, 3362]	4975	[5066, 3332]
1061	[1730, 582]	2366	[3154, 3155]	3671	[1491, 1605]	4976	[5067, 5068]
1062	[1606, 1731]	2367	[2989, 3156]	3672	[4228, 1619]	4977	[4302, 462]
1063	[1732, 1679]	2368	[1886, 3157]	3673	[3077, 2966]	4978	[5069, 200]
1064	[1733, 680]	2369	[3158, 681]	3674	[1613, 4229]	4979	[5070, 5071]
1065	[1718, 1734]	2370	[1946, 226]	3675	[4230, 2938]	4980	[4846, 3278]
1066	[189, 692]	2371	[1824, 682]	3676	[721, 582]	4981	[5072, 3272]
1067	[1735, 702]	2372	[3159, 694]	3677	[4231, 4232]	4982	[5073, 5074]
1068	[754, 1736]	2373	[1520, 233]	3678	[1742, 751]	4983	[4386, 1822]
1069	[1737, 1738]	2374	[3160, 1855]	3679	[1923, 1803]	4984	[3040, 1705]
1070	[1739, 551]	2375	[3161, 1449]	3680	[694, 239]	4985	[5075, 3259]
1071	[496, 554]	2376	[3162, 228]	3681	[4233, 1516]	4986	[5076, 1774]
1072	[1740, 1741]	2377	[3163, 3164]	3682	[4234, 1555]	4987	[5077, 738]
1073	[1742, 1743]	2378	[1661, 2022]	3683	[4235, 4236]	4988	[1461, 479]
1074	[1744, 465]	2379	[1659, 3165]	3684	[4237, 4238]	4989	[4172, 3252]
1075	[1745, 1746]	2380	[3166, 3167]	3685	[144, 3073]	4990	[5078, 676]
1076	[1508, 1747]	2381	[3168, 3087]	3686	[4142, 228]	4991	[5079, 619]
1077	[1748, 681]	2382	[3169, 3170]	3687	[4239, 640]	4992	[5080, 5081]
1078	[463, 1422]	2383	[1717, 2018]	3688	[4240, 231]	4993	[1477, 1591]
1079	[1624, 1657]	2384	[3171, 1563]	3689	[1883, 1930]	4994	[4128, 1457]
1080	[1749, 1750]	2385	[2030, 1514]	3690	[749, 1491]	4995	[5082, 1713]
1081	[1751, 1752]	2386	[3172, 3173]	3691	[179, 684]	4996	[5083, 501]
1082	[1753, 1754]	2387	[3174, 460]	3692	[4241, 4242]	4997	[5084, 4267]
1083	[1704, 159]	2388	[649, 143]	3693	[4227, 2022]	4998	[126, 2943]
1084	[1755, 754]	2389	[541, 1812]	3694	[4243, 3222]	4999	[4334, 2961]
1085	[1756, 1757]	2390	[3175, 660]	3695	[4244, 4245]	5000	[5085, 1876]
1086	[1758, 182]	2391	[45, 3003]	3696	[630, 494]	5001	[5086, 1876]
1087	[1541, 579]	2392	[1884, 652]	3697	[4246, 1847]	5002	[3117, 3042]
1088	[1659, 1437]	2393	[1664, 741]	3698	[666, 1771]	5003	[5087, 477]
1089	[1759, 1760]	2394	[1411, 2034]	3699	[1729, 649]	5004	[5088, 4121]
1090	[1584, 1761]	2395	[1916, 1534]	3700	[4221, 732]	5005	[3355, 1849]
1091	[1762, 1763]	2396	[3176, 1650]	3701	[1995, 237]	5006	[4225, 3042]

1092	[653, 637]	2397	[3177, 644]	3702	[4247, 3175]	5007	[5089, 734]
1093	[1764, 1765]	2398	[214, 1973]	3703	[1646, 1950]	5008	[5090, 5091]
1094	[1652, 1766]	2399	[3178, 521]	3704	[1999, 3228]	5009	[5092, 1394]
1095	[1522, 1767]	2400	[3179, 3180]	3705	[3468, 704]	5010	[5093, 4325]
1096	[221, 671]	2401	[3181, 1403]	3706	[1669, 540]	5011	[622, 479]
1097	[1768, 171]	2402	[3182, 3183]	3707	[701, 1633]	5012	[5094, 1671]
1098	[1664, 1769]	2403	[3184, 655]	3708	[231, 1962]	5013	[5095, 4799]
1099	[1770, 1771]	2404	[3185, 3186]	3709	[4248, 787]	5014	[1527, 1819]
1100	[192, 1470]	2405	[3187, 3188]	3710	[1797, 2999]	5015	[1631, 1733]
1101	[1772, 1571]	2406	[1579, 1975]	3711	[3400, 1812]	5016	[4333, 3110]
1102	[1574, 1773]	2407	[3189, 3190]	3712	[4249, 1682]	5017	[5096, 1614]
1103	[1764, 1774]	2408	[2913, 1441]	3713	[4250, 4251]	5018	[5097, 4850]
1104	[1775, 503]	2409	[1738, 796]	3714	[3019, 752]	5019	[4407, 1766]
1105	[1776, 1777]	2410	[3191, 603]	3715	[616, 1933]	5020	[540, 1811]
1106	[1767, 1399]	2411	[1650, 1971]	3716	[1784, 1509]	5021	[5098, 2016]
1107	[671, 1612]	2412	[1917, 3064]	3717	[3404, 789]	5022	[5099, 4254]
1108	[800, 57]	2413	[3192, 648]	3718	[566, 1876]	5023	[1484, 535]
1109	[1778, 40]	2414	[1562, 513]	3719	[4252, 3047]	5024	[4185, 3088]
1110	[135, 1779]	2415	[3193, 1528]	3720	[4253, 512]	5025	[3149, 3030]
1111	[1697, 165]	2416	[40, 1611]	3721	[3261, 746]	5026	[5100, 2016]
1112	[1780, 1781]	2417	[1953, 3194]	3722	[4254, 1790]	5027	[5101, 4356]
1113	[1782, 578]	2418	[3195, 1984]	3723	[4255, 1643]	5028	[3422, 1873]
1114	[1783, 491]	2419	[3196, 1894]	3724	[3043, 1398]	5029	[5102, 2471]
1115	[32, 1501]	2420	[3197, 1988]	3725	[1474, 1503]	5030	[5103, 5104]
1116	[1784, 1747]	2421	[38, 1696]	3726	[468, 1988]	5031	[4065, 1263]
1117	[1785, 1786]	2422	[682, 1760]	3727	[4146, 1729]	5032	[5105, 995]
1118	[1787, 1788]	2423	[3198, 558]	3728	[1956, 801]	5033	[5106, 5107]
1119	[1789, 1790]	2424	[3199, 141]	3729	[3172, 3287]	5034	[5108, 3544]
1120	[1791, 1792]	2425	[3200, 1797]	3730	[3178, 1982]	5035	[5109, 3904]
1121	[1793, 1794]	2426	[3201, 575]	3731	[4228, 768]	5036	[5110, 3525]
1122	[33, 487]	2427	[1533, 1667]	3732	[3317, 4256]	5037	[5111, 2127]
1123	[676, 1519]	2428	[3051, 3008]	3733	[4257, 4258]	5038	[1341, 1035]
1124	[1795, 1707]	2429	[3202, 1498]	3734	[4177, 2952]	5039	[5112, 291]
1125	[709, 1420]	2430	[3203, 1878]	3735	[1873, 236]	5040	[3476, 2644]
1126	[516, 780]	2431	[3204, 1941]	3736	[4259, 541]	5041	[5113, 2229]
1127	[1796, 1797]	2432	[3205, 221]	3737	[4260, 1771]	5042	[5114, 5115]
1128	[1798, 1799]	2433	[1591, 574]	3738	[4261, 3138]	5043	[3923, 266]
1129	[1800, 605]	2434	[792, 54]	3739	[2037, 172]	5044	[5116, 3252]
1130	[182, 219]	2435	[1654, 798]	3740	[4262, 3063]	5045	[2609, 2261]
1131	[1801, 1802]	2436	[3206, 3194]	3741	[4263, 1432]	5046	[1052, 3906]
1132	[1803, 1804]	2437	[1656, 756]	3742	[4264, 177]	5047	[5117, 2416]
1133	[1414, 550]	2438	[3207, 3208]	3743	[4265, 4266]	5048	[5118, 5119]
1134	[605, 1573]	2439	[3209, 2002]	3744	[3260, 660]	5049	[5120, 2577]
1135	[658, 8]	2440	[1893, 662]	3745	[3459, 141]	5050	[5121, 3828]

1136	[1805, 1806]	2441	[1791, 3210]	3746	[4267, 1563]	5051	[1384, 434]
1137	[1807, 36]	2442	[1876, 478]	3747	[4268, 3085]	5052	[5122, 2307]
1138	[1804, 1808]	2443	[3088, 2913]	3748	[4269, 4270]	5053	[5123, 5124]
1139	[1641, 1809]	2444	[2017, 3088]	3749	[3168, 1648]	5054	[2132, 2221]
1140	[1810, 1568]	2445	[3113, 1986]	3750	[3312, 1513]	5055	[5125, 1184]
1141	[1811, 1812]	2446	[3211, 575]	3751	[4271, 2942]	5056	[5126, 3545]
1142	[1813, 1814]	2447	[3212, 558]	3752	[1493, 1913]	5057	[4712, 2353]
1143	[133, 1773]	2448	[3213, 3214]	3753	[152, 205]	5058	[2264, 829]
1144	[1815, 1816]	2449	[3215, 226]	3754	[3203, 4118]	5059	[5127, 3671]
1145	[1817, 237]	2450	[1731, 607]	3755	[3409, 586]	5060	[5128, 5129]
1146	[1431, 1818]	2451	[3216, 501]	3756	[3072, 145]	5061	[2546, 4071]
1147	[1819, 496]	2452	[3064, 1631]	3757	[3264, 2010]	5062	[5130, 3940]
1148	[1820, 467]	2453	[1408, 1760]	3758	[4156, 1717]	5063	[3746, 3810]
1149	[1821, 557]	2454	[1416, 2986]	3759	[4272, 4273]	5064	[5131, 4685]
1150	[1822, 727]	2455	[3217, 3169]	3760	[3292, 3339]	5065	[5132, 5133]
1151	[550, 1823]	2456	[3074, 1937]	3761	[3055, 1946]	5066	[5134, 2195]
1152	[1824, 1408]	2457	[3218, 1858]	3762	[1900, 517]	5067	[5135, 958]
1153	[178, 1416]	2458	[3219, 205]	3763	[4274, 723]	5068	[5136, 5137]
1154	[1825, 1761]	2459	[783, 1920]	3764	[4275, 467]	5069	[2800, 2532]
1155	[156, 1826]	2460	[3220, 1786]	3765	[4224, 575]	5070	[5138, 2136]
1156	[1827, 1493]	2461	[3221, 3222]	3766	[587, 4163]	5071	[5139, 5140]
1157	[1828, 602]	2462	[3087, 1711]	3767	[4276, 1633]	5072	[1380, 3502]
1158	[1829, 1446]	2463	[3223, 1652]	3768	[577, 551]	5073	[5141, 953]
1159	[1830, 50]	2464	[1478, 574]	3769	[4277, 2919]	5074	[5142, 5143]
1160	[1831, 1832]	2465	[3224, 787]	3770	[623, 1890]	5075	[5144, 63]
1161	[216, 1781]	2466	[1577, 3108]	3771	[1414, 1453]	5076	[5145, 2500]
1162	[1833, 477]	2467	[160, 1959]	3772	[4234, 163]	5077	[5146, 1287]
1163	[1834, 127]	2468	[3225, 571]	3773	[4278, 45]	5078	[5147, 881]
1164	[1835, 1836]	2469	[1554, 163]	3774	[1853, 578]	5079	[2330, 2219]
1165	[1458, 1767]	2470	[3051, 1652]	3775	[4279, 1577]	5080	[5148, 2836]
1166	[739, 1624]	2471	[513, 1956]	3776	[678, 1982]	5081	[5149, 5150]
1167	[236, 1832]	2472	[1811, 1994]	3777	[4280, 4281]	5082	[3828, 859]
1168	[1837, 1838]	2473	[757, 1793]	3778	[1783, 563]	5083	[5151, 2207]
1169	[1727, 1839]	2474	[1608, 191]	3779	[3284, 498]	5084	[2903, 1147]
1170	[1840, 1841]	2475	[204, 2005]	3780	[479, 628]	5085	[5152, 842]
1171	[1842, 1566]	2476	[3157, 174]	3781	[4282, 756]	5086	[5153, 2761]
1172	[1843, 1539]	2477	[700, 638]	3782	[4283, 746]	5087	[5154, 3542]
1173	[1456, 506]	2478	[3226, 780]	3783	[3328, 156]	5088	[966, 4739]
1174	[186, 801]	2479	[551, 224]	3784	[486, 34]	5089	[5155, 3823]
1175	[1755, 125]	2480	[3227, 3228]	3785	[4284, 1719]	5090	[5156, 1249]
1176	[1844, 721]	2481	[3229, 3230]	3786	[493, 232]	5091	[5157, 5158]
1177	[655, 1845]	2482	[3231, 3050]	3787	[4285, 1537]	5092	[5159, 3881]
1178	[1846, 1651]	2483	[3232, 3228]	3788	[4286, 3039]	5093	[2521, 3915]
1179	[1847, 1533]	2484	[3233, 741]	3789	[573, 624]	5094	[5160, 2129]

1180	[1848, 1526]	2485	[3234, 3235]	3790	[3441, 3222]	5095	[2253, 2458]
1181	[1849, 205]	2486	[1649, 1926]	3791	[4287, 729]	5096	[5161, 2889]
1182	[467, 643]	2487	[3236, 1425]	3792	[3467, 1546]	5097	[3722, 2613]
1183	[1850, 1622]	2488	[3014, 3138]	3793	[4288, 3056]	5098	[5162, 2049]
1184	[1851, 1634]	2489	[3237, 1628]	3794	[3115, 3170]	5099	[5163, 1181]
1185	[563, 716]	2490	[1556, 1468]	3795	[476, 4289]	5100	[5164, 2128]
1186	[1852, 485]	2491	[3238, 3239]	3796	[3133, 726]	5101	[2751, 867]
1187	[1478, 624]	2492	[3240, 793]	3797	[3450, 3236]	5102	[5165, 1719]
1188	[1853, 1541]	2493	[3163, 3236]	3798	[2924, 236]	5103	[5166, 5167]
1189	[1854, 1855]	2494	[3241, 3128]	3799	[4290, 224]	5104	[1934, 2986]
1190	[1856, 751]	2495	[3242, 3243]	3800	[1833, 4289]	5105	[5168, 1394]
1191	[1857, 1858]	2496	[3244, 1913]	3801	[4291, 4292]	5106	[5169, 4170]
1192	[1859, 1860]	2497	[3245, 2030]	3802	[4211, 3144]	5107	[2032, 540]
1193	[1453, 1823]	2498	[3246, 2939]	3803	[3315, 565]	5108	[3417, 3114]
1194	[1861, 1689]	2499	[1441, 1674]	3804	[4293, 1516]	5109	[4799, 1543]
1195	[642, 644]	2500	[3247, 2017]	3805	[4294, 1689]	5110	[3294, 1716]
1196	[1577, 1600]	2501	[3248, 1715]	3806	[4295, 4296]	5111	[3207, 4256]
1197	[1862, 1863]	2502	[591, 591]	3807	[1992, 2003]	5112	[2926, 1822]
1198	[125, 1736]	2503	[592, 591]	3808	[4297, 1546]	5113	[5170, 2996]
1199	[1864, 184]	2504	[1717, 3088]	3809	[4277, 1905]	5114	[5171, 4142]
1200	[1865, 1404]	2505	[3249, 636]	3810	[4298, 153]	5115	[3395, 1766]
1201	[1733, 1723]	2506	[1552, 3170]	3811	[3071, 2975]	5116	[3455, 2973]
1202	[1866, 1867]	2507	[3250, 1614]	3812	[3083, 1435]	5117	[5172, 3058]
1203	[1868, 1661]	2508	[3251, 3188]	3813	[3370, 578]	5118	[5173, 697]
1204	[1869, 1870]	2509	[3252, 2983]	3814	[2930, 758]	5119	[1976, 1819]
1205	[1871, 1872]	2510	[719, 1611]	3815	[4299, 3050]	5120	[4427, 519]
1206	[1773, 1873]	2511	[3253, 1422]	3816	[36, 3060]	5121	[4843, 154]
1207	[233, 1422]	2512	[1563, 514]	3817	[4300, 165]	5122	[5174, 1614]
1208	[1711, 195]	2513	[3254, 181]	3818	[1857, 4301]	5123	[5175, 1911]
1209	[1874, 1875]	2514	[3255, 703]	3819	[729, 59]	5124	[1395, 1631]
1210	[1876, 538]	2515	[545, 158]	3820	[3146, 1809]	5125	[4191, 211]
1211	[1877, 1878]	2516	[3256, 3257]	3821	[3000, 599]	5126	[4337, 2]
1212	[1680, 1721]	2517	[3258, 3259]	3822	[4302, 1520]	5127	[5176, 1671]
1213	[1879, 206]	2518	[3260, 218]	3823	[1696, 1640]	5128	[5177, 4144]
1214	[1880, 1466]	2519	[1801, 48]	3824	[4303, 1517]	5129	[1410, 2033]
1215	[606, 167]	2520	[3261, 516]	3825	[3348, 1401]	5130	[4285, 2973]
1216	[229, 1799]	2521	[3007, 201]	3826	[3462, 2941]	5131	[5178, 1984]
1217	[1881, 1882]	2522	[3262, 686]	3827	[4304, 4167]	5132	[5179, 5180]
1218	[1883, 1609]	2523	[157, 3013]	3828	[1566, 1469]	5133	[3379, 239]
1219	[1884, 1885]	2524	[3263, 3264]	3829	[1819, 553]	5134	[3407, 1470]
1220	[1886, 1887]	2525	[589, 2010]	3830	[518, 775]	5135	[5181, 1975]
1221	[1888, 1889]	2526	[3265, 3266]	3831	[4305, 4306]	5136	[5182, 600]
1222	[479, 1890]	2527	[216, 197]	3832	[3313, 61]	5137	[785, 561]
1223	[1403, 155]	2528	[1547, 2030]	3833	[4307, 758]	5138	[5183, 3167]

1224	[1891, 216]	2529	[634, 2]	3834	[4308, 4309]	5139	[5184, 2950]
1225	[1892, 494]	2530	[3267, 3156]	3835	[1772, 1466]	5140	[3141, 1873]
1226	[1893, 1894]	2531	[3268, 1713]	3836	[4196, 1804]	5141	[5185, 712]
1227	[1890, 629]	2532	[62, 3026]	3837	[1855, 1860]	5142	[5186, 3269]
1228	[1895, 1896]	2533	[35, 1498]	3838	[1632, 702]	5143	[1957, 3055]
1229	[1897, 131]	2534	[3269, 178]	3839	[4310, 3135]	5144	[1617, 1654]
1230	[1898, 1396]	2535	[2011, 487]	3840	[4311, 1715]	5145	[4313, 1885]
1231	[602, 1899]	2536	[3164, 1425]	3841	[4312, 646]	5146	[4144, 201]
1232	[567, 538]	2537	[43, 1832]	3842	[4313, 652]	5147	[31, 211]
1233	[463, 234]	2538	[3270, 167]	3843	[4121, 1403]	5148	[5187, 1774]
1234	[597, 1545]	2539	[558, 611]	3844	[4193, 750]	5149	[5188, 724]
1235	[1900, 509]	2540	[3271, 3272]	3845	[4314, 3243]	5150	[4303, 540]
1236	[1901, 597]	2541	[3273, 1647]	3846	[4315, 3060]	5151	[4184, 1885]
1237	[1530, 1488]	2542	[1722, 680]	3847	[4316, 4317]	5152	[3443, 1446]
1238	[1902, 221]	2543	[657, 58]	3848	[2944, 10]	5153	[3398, 1569]
1239	[1515, 1903]	2544	[3274, 1397]	3849	[4274, 229]	5154	[2912, 3073]
1240	[1904, 1905]	2545	[1567, 1836]	3850	[4318, 190]	5155	[1759, 752]
1241	[503, 1469]	2546	[2018, 1715]	3851	[4162, 588]	5156	[5189, 1858]
1242	[1665, 656]	2547	[601, 174]	3852	[3029, 1439]	5157	[5190, 4843]
1243	[1906, 1907]	2548	[3275, 212]	3853	[2988, 3190]	5158	[1775, 1566]
1244	[483, 1908]	2549	[3276, 1445]	3854	[4319, 3278]	5159	[3336, 2]
1245	[1909, 1910]	2550	[3277, 3003]	3855	[4320, 4321]	5160	[1706, 1907]
1246	[1644, 613]	2551	[2936, 3278]	3856	[1660, 1918]	5161	[4180, 3073]
1247	[1911, 228]	2552	[3279, 1733]	3857	[4322, 2031]	5162	[4127, 4256]
1248	[149, 1460]	2553	[3280, 3278]	3858	[3184, 1480]	5163	[4222, 467]
1249	[1912, 1913]	2554	[1803, 1604]	3859	[3391, 3110]	5164	[3473, 519]
1250	[1914, 1915]	2555	[1906, 1707]	3860	[3050, 54]	5165	[5191, 113]
1251	[539, 754]	2556	[3281, 1400]	3861	[4323, 4217]	5166	[5192, 1306]
1252	[1480, 1845]	2557	[3282, 3283]	3862	[774, 519]	5167	[5193, 5194]
1253	[1916, 1917]	2558	[3284, 676]	3863	[4324, 3188]	5168	[5195, 2503]
1254	[1709, 1918]	2559	[3285, 1814]	3864	[485, 1863]	5169	[4646, 3645]
1255	[1745, 1870]	2560	[3286, 3287]	3865	[4325, 656]	5170	[5196, 1048]
1256	[1919, 1920]	2561	[174, 1899]	3866	[4326, 4122]	5171	[2850, 3761]
1257	[1921, 1509]	2562	[3288, 764]	3867	[1983, 4327]	5172	[5197, 3570]
1258	[562, 1531]	2563	[1404, 1428]	3868	[4133, 1654]	5173	[3850, 388]
1259	[1639, 1826]	2564	[3289, 1427]	3869	[4328, 4329]	5174	[5198, 4104]
1260	[515, 746]	2565	[1695, 597]	3870	[49, 1490]	5175	[3522, 435]
1261	[1922, 1907]	2566	[3290, 2999]	3871	[3344, 1446]	5176	[5199, 2126]
1262	[1923, 771]	2567	[1890, 3095]	3872	[522, 139]	5177	[5200, 1343]
1263	[1924, 1693]	2568	[3291, 149]	3873	[3309, 3257]	5178	[2239, 2117]
1264	[1866, 1626]	2569	[3292, 534]	3874	[4330, 4331]	5179	[5201, 876]
1265	[1925, 1926]	2570	[2929, 43]	3875	[134, 1679]	5180	[5202, 5203]
1266	[1927, 1928]	2571	[3293, 1503]	3876	[1895, 1682]	5181	[5204, 2130]
1267	[197, 561]	2572	[3294, 1441]	3877	[4332, 1738]	5182	[2376, 2403]

1268	[222, 1412]	2573	[3295, 1813]	3878	[4333, 1493]	5183	[5205, 3568]
1269	[1929, 1930]	2574	[806, 1630]	3879	[3247, 1717]	5184	[3563, 2552]
1270	[1820, 642]	2575	[648, 1402]	3880	[4334, 1583]	5185	[5206, 2131]
1271	[462, 233]	2576	[3296, 483]	3881	[4335, 1674]	5186	[3647, 1241]
1272	[1867, 1565]	2577	[2983, 3252]	3882	[4336, 539]	5187	[5207, 2208]
1273	[1875, 1931]	2578	[3022, 3106]	3883	[4337, 635]	5188	[6, 1381]
1274	[1932, 1757]	2579	[3004, 1950]	3884	[4304, 3047]	5189	[5208, 2502]
1275	[208, 540]	2580	[1498, 3060]	3885	[4259, 1811]	5190	[3778, 298]
1276	[754, 595]	2581	[1938, 2996]	3886	[4338, 1832]	5191	[2001, 497]
1277	[1933, 572]	2582	[3187, 3297]	3887	[1724, 639]	5192	[5209, 1858]
1278	[1934, 684]	2583	[1908, 1522]	3888	[4339, 1549]	5193	[5210, 4222]
1279	[1935, 1936]	2584	[3262, 170]	3889	[1406, 1526]	5194	[3472, 1849]
1280	[1672, 1937]	2585	[3298, 1678]	3890	[4340, 3210]	5195	[1438, 3030]
1281	[1938, 1939]	2586	[3299, 571]	3891	[4341, 4342]	5196	[4310, 3155]
1282	[1940, 1941]	2587	[3182, 1701]	3892	[524, 1856]	5197	[4376, 1809]
1283	[1455, 482]	2588	[2943, 138]	3893	[4343, 701]	5198	[3340, 1551]
1284	[610, 559]	2589	[1445, 509]	3894	[4344, 768]	5199	[4787, 4118]
1285	[1942, 1520]	2590	[3300, 1411]	3895	[39, 1569]	5200	[4850, 1797]
1286	[1943, 1944]	2591	[686, 171]	3896	[4345, 1449]	5201	[5211, 477]
1287	[1945, 1946]	2592	[3301, 795]	3897	[4346, 1473]	5202	[5212, 1820]
1288	[1922, 1707]	2593	[1817, 1543]	3898	[4347, 764]	5203	[502, 1566]
1289	[584, 1752]	2594	[3302, 229]	3899	[4178, 4238]	5204	[4401, 1809]
1290	[1947, 1948]	2595	[2026, 33]	3900	[4348, 572]	5205	[3432, 3330]
1291	[768, 1637]	2596	[3303, 2008]	3901	[4349, 4350]	5206	[3460, 4118]
1292	[1485, 200]	2597	[1778, 1569]	3902	[146, 637]	5207	[3350, 3114]
1293	[1949, 1950]	2598	[3304, 1961]	3903	[3457, 1792]	5208	[3293, 1475]
1294	[1951, 1945]	2599	[3259, 3020]	3904	[786, 562]	5209	[5213, 2104]
1295	[1804, 1948]	2600	[1924, 669]	3905	[4190, 149]	5210	[5214, 821]
1296	[1952, 1953]	2601	[1806, 3021]	3906	[4351, 1915]	5211	[5215, 2106]
1297	[1954, 635]	2602	[3305, 3306]	3907	[488, 181]	5212	[3917, 2798]
1298	[1955, 646]	2603	[3096, 3307]	3908	[1879, 461]	5213	[4415, 3155]
1299	[1563, 1956]	2604	[3308, 1887]	3909	[4352, 4324]	5214	[600, 748]
1300	[1957, 1945]	2605	[3309, 3121]	3910	[1940, 1539]	5215	[3101, 1551]
1301	[1958, 1959]	2606	[3310, 3311]	3911	[3166, 4353]		
1302	[1960, 1961]	2607	[3010, 494]	3912	[1519, 535]		
1303	[493, 1962]	2608	[3312, 2030]	3913	[4354, 1520]		
1304	[532, 224]	2609	[3313, 1797]	3914	[4284, 1734]		

Output function $n \mapsto \tau(n)$:

n	$\tau(n)$	n	$\tau(n)$	n	$\tau(n)$	n	$\tau(n)$	n	$\tau(n)$	n	$\tau(n)$
0	0	870	0	1740	0	2610	1	3480	0	4350	1
1	0	871	0	1741	0	2611	0	3481	0	4351	0
2	0	872	0	1742	1	2612	0	3482	0	4352	1
3	0	873	1	1743	1	2613	1	3483	0	4353	0

4	0	874	0	1744	1	2614	0	3484	0	4354	1
5	0	875	1	1745	1	2615	0	3485	0	4355	0
6	0	876	0	1746	1	2616	0	3486	0	4356	1
7	0	877	1	1747	0	2617	0	3487	1	4357	0
8	0	878	1	1748	1	2618	0	3488	1	4358	0
9	0	879	1	1749	0	2619	1	3489	1	4359	0
10	1	880	1	1750	1	2620	1	3490	1	4360	0
11	0	881	0	1751	0	2621	0	3491	0	4361	1
12	0	882	1	1752	1	2622	0	3492	0	4362	0
13	0	883	0	1753	1	2623	0	3493	1	4363	1
14	0	884	1	1754	1	2624	1	3494	1	4364	0
15	0	885	0	1755	1	2625	0	3495	1	4365	0
16	1	886	0	1756	0	2626	1	3496	1	4366	1
17	0	887	1	1757	0	2627	1	3497	1	4367	1
18	0	888	1	1758	1	2628	0	3498	0	4368	1
19	0	889	1	1759	1	2629	0	3499	1	4369	1
20	0	890	1	1760	1	2630	1	3500	1	4370	0
21	1	891	0	1761	1	2631	0	3501	1	4371	0
22	1	892	1	1762	0	2632	1	3502	1	4372	1
23	0	893	0	1763	1	2633	0	3503	0	4373	1
24	1	894	1	1764	1	2634	1	3504	0	4374	1
25	0	895	0	1765	1	2635	0	3505	0	4375	1
26	1	896	0	1766	1	2636	0	3506	1	4376	1
27	0	897	1	1767	1	2637	1	3507	1	4377	1
28	0	898	1	1768	1	2638	1	3508	0	4378	0
29	0	899	0	1769	0	2639	0	3509	1	4379	0
30	0	900	1	1770	0	2640	0	3510	1	4380	1
31	0	901	1	1771	0	2641	1	3511	1	4381	0
32	0	902	0	1772	0	2642	0	3512	0	4382	0
33	1	903	0	1773	0	2643	1	3513	1	4383	1
34	0	904	0	1774	0	2644	0	3514	0	4384	0
35	0	905	1	1775	0	2645	0	3515	1	4385	0
36	0	906	0	1776	1	2646	1	3516	0	4386	1
37	0	907	0	1777	1	2647	0	3517	1	4387	0
38	0	908	1	1778	1	2648	1	3518	1	4388	1
39	0	909	1	1779	1	2649	0	3519	1	4389	1
40	1	910	1	1780	1	2650	1	3520	1	4390	1
41	0	911	1	1781	0	2651	1	3521	1	4391	0
42	0	912	0	1782	1	2652	0	3522	0	4392	1
43	1	913	0	1783	0	2653	0	3523	1	4393	0
44	1	914	0	1784	1	2654	1	3524	1	4394	1
45	1	915	1	1785	1	2655	0	3525	0	4395	0
46	1	916	0	1786	1	2656	0	3526	0	4396	1
47	0	917	0	1787	1	2657	0	3527	1	4397	0

48	1	918	0	1788	0	2658	1	3528	0	4398	1
49	1	919	1	1789	0	2659	1	3529	1	4399	1
50	0	920	1	1790	0	2660	0	3530	1	4400	1
51	0	921	1	1791	0	2661	0	3531	1	4401	0
52	1	922	0	1792	0	2662	0	3532	1	4402	0
53	1	923	0	1793	1	2663	0	3533	0	4403	1
54	1	924	1	1794	0	2664	0	3534	0	4404	1
55	0	925	0	1795	1	2665	1	3535	0	4405	1
56	0	926	0	1796	0	2666	1	3536	1	4406	0
57	0	927	1	1797	1	2667	1	3537	1	4407	0
58	1	928	0	1798	0	2668	0	3538	1	4408	1
59	0	929	1	1799	0	2669	1	3539	1	4409	0
60	1	930	1	1800	0	2670	1	3540	1	4410	1
61	0	931	1	1801	0	2671	0	3541	1	4411	1
62	1	932	0	1802	0	2672	1	3542	0	4412	1
63	0	933	1	1803	1	2673	1	3543	0	4413	0
64	0	934	0	1804	1	2674	1	3544	0	4414	1
65	0	935	1	1805	0	2675	0	3545	0	4415	0
66	0	936	1	1806	0	2676	0	3546	0	4416	1
67	1	937	0	1807	1	2677	1	3547	0	4417	1
68	1	938	0	1808	0	2678	0	3548	0	4418	0
69	0	939	1	1809	1	2679	0	3549	1	4419	0
70	1	940	0	1810	0	2680	0	3550	0	4420	1
71	0	941	1	1811	1	2681	0	3551	1	4421	1
72	0	942	1	1812	0	2682	0	3552	1	4422	0
73	0	943	0	1813	1	2683	0	3553	1	4423	0
74	0	944	0	1814	1	2684	1	3554	1	4424	1
75	0	945	0	1815	0	2685	1	3555	1	4425	0
76	0	946	0	1816	1	2686	1	3556	1	4426	0
77	0	947	0	1817	0	2687	1	3557	1	4427	1
78	0	948	1	1818	0	2688	0	3558	1	4428	0
79	0	949	0	1819	0	2689	1	3559	1	4429	0
80	0	950	0	1820	1	2690	1	3560	0	4430	0
81	1	951	0	1821	0	2691	1	3561	0	4431	0
82	0	952	0	1822	1	2692	1	3562	1	4432	1
83	0	953	0	1823	1	2693	1	3563	1	4433	1
84	1	954	1	1824	0	2694	0	3564	1	4434	1
85	0	955	1	1825	1	2695	0	3565	0	4435	0
86	1	956	0	1826	1	2696	1	3566	1	4436	0
87	1	957	0	1827	1	2697	0	3567	0	4437	1
88	1	958	0	1828	0	2698	1	3568	0	4438	0
89	1	959	1	1829	1	2699	0	3569	0	4439	1
90	0	960	1	1830	0	2700	0	3570	1	4440	0
91	1	961	0	1831	0	2701	1	3571	1	4441	0

92	0	962	1	1832	0	2702	0	3572	0	4442	0
93	1	963	0	1833	1	2703	1	3573	1	4443	1
94	0	964	1	1834	1	2704	1	3574	1	4444	0
95	0	965	1	1835	0	2705	1	3575	1	4445	1
96	0	966	1	1836	0	2706	1	3576	1	4446	1
97	1	967	1	1837	0	2707	1	3577	1	4447	0
98	0	968	1	1838	0	2708	0	3578	1	4448	1
99	1	969	0	1839	0	2709	0	3579	0	4449	0
100	0	970	0	1840	1	2710	1	3580	0	4450	1
101	1	971	1	1841	1	2711	0	3581	1	4451	1
102	0	972	0	1842	1	2712	1	3582	0	4452	0
103	0	973	1	1843	1	2713	1	3583	0	4453	1
104	1	974	1	1844	0	2714	1	3584	1	4454	0
105	1	975	0	1845	1	2715	1	3585	1	4455	1
106	1	976	0	1846	1	2716	1	3586	0	4456	0
107	0	977	0	1847	1	2717	0	3587	0	4457	0
108	1	978	0	1848	0	2718	1	3588	1	4458	1
109	1	979	1	1849	1	2719	0	3589	0	4459	1
110	0	980	1	1850	1	2720	1	3590	1	4460	0
111	0	981	0	1851	0	2721	0	3591	1	4461	0
112	1	982	1	1852	0	2722	0	3592	0	4462	1
113	0	983	0	1853	0	2723	1	3593	1	4463	1
114	0	984	0	1854	0	2724	0	3594	0	4464	0
115	1	985	1	1855	0	2725	0	3595	0	4465	1
116	0	986	1	1856	0	2726	0	3596	1	4466	0
117	0	987	1	1857	1	2727	0	3597	0	4467	0
118	1	988	0	1858	1	2728	1	3598	0	4468	1
119	1	989	0	1859	0	2729	1	3599	0	4469	1
120	0	990	0	1860	1	2730	1	3600	1	4470	0
121	0	991	1	1861	1	2731	1	3601	0	4471	1
122	0	992	1	1862	1	2732	0	3602	0	4472	0
123	1	993	0	1863	1	2733	1	3603	1	4473	0
124	1	994	0	1864	0	2734	1	3604	1	4474	1
125	1	995	1	1865	1	2735	1	3605	1	4475	0
126	0	996	0	1866	1	2736	1	3606	0	4476	1
127	0	997	1	1867	0	2737	1	3607	1	4477	0
128	0	998	1	1868	0	2738	1	3608	1	4478	0
129	1	999	0	1869	0	2739	1	3609	0	4479	1
130	0	1000	0	1870	0	2740	0	3610	1	4480	1
131	0	1001	1	1871	1	2741	1	3611	0	4481	0
132	1	1002	0	1872	1	2742	0	3612	1	4482	1
133	0	1003	0	1873	1	2743	0	3613	1	4483	0
134	1	1004	0	1874	1	2744	0	3614	1	4484	0
135	0	1005	0	1875	0	2745	0	3615	1	4485	1

136	0	1006	0	1876	1	2746	0	3616	0	4486	1
137	0	1007	0	1877	0	2747	1	3617	1	4487	0
138	1	1008	0	1878	1	2748	0	3618	0	4488	1
139	1	1009	0	1879	1	2749	1	3619	0	4489	0
140	0	1010	0	1880	1	2750	0	3620	0	4490	0
141	0	1011	0	1881	0	2751	0	3621	0	4491	0
142	0	1012	0	1882	0	2752	0	3622	1	4492	1
143	0	1013	1	1883	0	2753	1	3623	0	4493	1
144	0	1014	0	1884	0	2754	1	3624	1	4494	0
145	0	1015	1	1885	1	2755	1	3625	1	4495	0
146	0	1016	1	1886	1	2756	0	3626	0	4496	1
147	0	1017	0	1887	0	2757	0	3627	0	4497	1
148	0	1018	0	1888	0	2758	1	3628	0	4498	0
149	1	1019	1	1889	1	2759	1	3629	0	4499	1
150	0	1020	0	1890	0	2760	1	3630	1	4500	0
151	0	1021	0	1891	1	2761	0	3631	0	4501	1
152	0	1022	1	1892	1	2762	1	3632	1	4502	1
153	0	1023	0	1893	0	2763	1	3633	0	4503	1
154	0	1024	1	1894	1	2764	1	3634	1	4504	0
155	1	1025	1	1895	1	2765	1	3635	0	4505	1
156	0	1026	0	1896	1	2766	0	3636	1	4506	1
157	0	1027	1	1897	1	2767	1	3637	0	4507	1
158	0	1028	0	1898	1	2768	1	3638	1	4508	1
159	0	1029	1	1899	0	2769	1	3639	0	4509	0
160	1	1030	1	1900	0	2770	0	3640	0	4510	0
161	0	1031	0	1901	0	2771	0	3641	1	4511	0
162	0	1032	0	1902	0	2772	1	3642	0	4512	1
163	0	1033	0	1903	0	2773	0	3643	0	4513	1
164	0	1034	1	1904	0	2774	1	3644	0	4514	0
165	0	1035	1	1905	1	2775	1	3645	1	4515	1
166	1	1036	1	1906	1	2776	1	3646	0	4516	0
167	1	1037	1	1907	0	2777	1	3647	0	4517	1
168	0	1038	0	1908	1	2778	0	3648	0	4518	0
169	0	1039	1	1909	1	2779	0	3649	0	4519	0
170	1	1040	1	1910	1	2780	0	3650	0	4520	0
171	1	1041	1	1911	0	2781	0	3651	0	4521	0
172	1	1042	0	1912	0	2782	1	3652	0	4522	1
173	0	1043	1	1913	1	2783	1	3653	0	4523	1
174	1	1044	0	1914	1	2784	0	3654	1	4524	1
175	1	1045	0	1915	1	2785	0	3655	0	4525	0
176	1	1046	0	1916	1	2786	1	3656	0	4526	1
177	1	1047	1	1917	1	2787	0	3657	0	4527	1
178	0	1048	1	1918	0	2788	1	3658	1	4528	1
179	1	1049	0	1919	1	2789	0	3659	1	4529	1

180	1	1050	0	1920	0	2790	0	3660	0	4530	0
181	1	1051	1	1921	0	2791	0	3661	0	4531	0
182	1	1052	1	1922	0	2792	0	3662	1	4532	1
183	1	1053	0	1923	1	2793	0	3663	0	4533	1
184	1	1054	0	1924	1	2794	0	3664	1	4534	0
185	0	1055	1	1925	1	2795	1	3665	0	4535	1
186	0	1056	1	1926	1	2796	0	3666	0	4536	0
187	1	1057	0	1927	0	2797	1	3667	1	4537	1
188	0	1058	1	1928	0	2798	0	3668	1	4538	0
189	1	1059	0	1929	0	2799	1	3669	0	4539	0
190	1	1060	0	1930	1	2800	1	3670	1	4540	1
191	1	1061	0	1931	0	2801	0	3671	1	4541	0
192	0	1062	1	1932	1	2802	1	3672	0	4542	1
193	0	1063	0	1933	1	2803	0	3673	0	4543	1
194	1	1064	1	1934	0	2804	1	3674	1	4544	0
195	1	1065	0	1935	1	2805	1	3675	1	4545	0
196	0	1066	1	1936	0	2806	0	3676	0	4546	0
197	1	1067	0	1937	0	2807	0	3677	1	4547	0
198	0	1068	0	1938	0	2808	0	3678	1	4548	0
199	0	1069	0	1939	0	2809	1	3679	1	4549	0
200	0	1070	1	1940	0	2810	1	3680	0	4550	0
201	0	1071	0	1941	1	2811	0	3681	0	4551	0
202	1	1072	0	1942	0	2812	0	3682	1	4552	1
203	0	1073	1	1943	1	2813	1	3683	1	4553	0
204	1	1074	1	1944	0	2814	0	3684	1	4554	0
205	1	1075	1	1945	0	2815	0	3685	0	4555	0
206	1	1076	0	1946	1	2816	1	3686	1	4556	1
207	0	1077	1	1947	1	2817	1	3687	1	4557	0
208	1	1078	1	1948	1	2818	1	3688	0	4558	1
209	1	1079	1	1949	1	2819	0	3689	0	4559	0
210	1	1080	0	1950	1	2820	1	3690	1	4560	0
211	1	1081	0	1951	0	2821	0	3691	1	4561	1
212	1	1082	1	1952	0	2822	0	3692	1	4562	1
213	0	1083	1	1953	1	2823	0	3693	1	4563	0
214	0	1084	1	1954	0	2824	0	3694	0	4564	1
215	0	1085	0	1955	0	2825	1	3695	1	4565	0
216	0	1086	1	1956	0	2826	1	3696	1	4566	1
217	1	1087	1	1957	1	2827	1	3697	1	4567	0
218	1	1088	0	1958	0	2828	0	3698	1	4568	0
219	0	1089	1	1959	1	2829	0	3699	1	4569	1
220	1	1090	0	1960	0	2830	0	3700	1	4570	1
221	0	1091	0	1961	1	2831	1	3701	0	4571	1
222	1	1092	1	1962	1	2832	0	3702	1	4572	1
223	1	1093	1	1963	0	2833	1	3703	0	4573	1

224	0	1094	1	1964	0	2834	0	3704	1	4574	1
225	0	1095	0	1965	0	2835	0	3705	0	4575	1
226	1	1096	0	1966	1	2836	1	3706	0	4576	0
227	0	1097	1	1967	1	2837	0	3707	1	4577	0
228	0	1098	1	1968	1	2838	1	3708	1	4578	0
229	1	1099	0	1969	0	2839	0	3709	1	4579	1
230	1	1100	0	1970	0	2840	1	3710	1	4580	1
231	1	1101	0	1971	0	2841	1	3711	0	4581	1
232	0	1102	1	1972	1	2842	0	3712	0	4582	0
233	0	1103	1	1973	1	2843	0	3713	0	4583	0
234	0	1104	0	1974	1	2844	1	3714	0	4584	1
235	0	1105	1	1975	0	2845	0	3715	1	4585	1
236	0	1106	1	1976	1	2846	1	3716	1	4586	1
237	0	1107	0	1977	0	2847	1	3717	0	4587	0
238	1	1108	1	1978	1	2848	1	3718	0	4588	0
239	1	1109	1	1979	1	2849	0	3719	1	4589	0
240	1	1110	0	1980	0	2850	1	3720	0	4590	1
241	0	1111	1	1981	0	2851	0	3721	1	4591	0
242	1	1112	1	1982	0	2852	0	3722	0	4592	1
243	0	1113	1	1983	0	2853	0	3723	0	4593	1
244	0	1114	0	1984	1	2854	1	3724	0	4594	1
245	0	1115	0	1985	1	2855	0	3725	0	4595	1
246	0	1116	1	1986	0	2856	0	3726	0	4596	1
247	0	1117	1	1987	0	2857	1	3727	1	4597	0
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249	1	1119	0	1989	0	2859	0	3729	1	4599	1
250	1	1120	0	1990	1	2860	1	3730	1	4600	0
251	1	1121	1	1991	0	2861	0	3731	0	4601	0
252	0	1122	1	1992	1	2862	0	3732	0	4602	1
253	1	1123	0	1993	0	2863	0	3733	1	4603	1
254	0	1124	1	1994	1	2864	0	3734	1	4604	1
255	1	1125	0	1995	0	2865	1	3735	1	4605	1
256	1	1126	1	1996	0	2866	1	3736	1	4606	0
257	1	1127	0	1997	0	2867	1	3737	1	4607	1
258	0	1128	0	1998	1	2868	0	3738	1	4608	1
259	1	1129	0	1999	1	2869	1	3739	1	4609	0
260	1	1130	1	2000	0	2870	0	3740	1	4610	1
261	0	1131	0	2001	0	2871	0	3741	1	4611	0
262	0	1132	1	2002	0	2872	1	3742	0	4612	1
263	1	1133	1	2003	0	2873	0	3743	0	4613	1
264	0	1134	0	2004	0	2874	0	3744	0	4614	1
265	1	1135	1	2005	0	2875	1	3745	1	4615	0
266	0	1136	0	2006	1	2876	0	3746	1	4616	1
267	0	1137	1	2007	0	2877	0	3747	0	4617	1

268	1	1138	1	2008	0	2878	0	3748	0	4618	1
269	1	1139	1	2009	1	2879	1	3749	0	4619	1
270	1	1140	0	2010	1	2880	0	3750	1	4620	1
271	1	1141	1	2011	0	2881	0	3751	1	4621	1
272	0	1142	1	2012	0	2882	0	3752	0	4622	1
273	0	1143	0	2013	0	2883	0	3753	0	4623	0
274	0	1144	0	2014	1	2884	1	3754	1	4624	0
275	0	1145	0	2015	0	2885	0	3755	0	4625	1
276	0	1146	1	2016	0	2886	0	3756	1	4626	1
277	0	1147	0	2017	0	2887	0	3757	0	4627	0
278	0	1148	1	2018	1	2888	1	3758	0	4628	1
279	0	1149	0	2019	0	2889	0	3759	1	4629	0
280	0	1150	1	2020	0	2890	1	3760	1	4630	1
281	0	1151	1	2021	0	2891	0	3761	1	4631	1
282	0	1152	0	2022	1	2892	0	3762	0	4632	1
283	0	1153	0	2023	1	2893	0	3763	1	4633	0
284	0	1154	1	2024	1	2894	1	3764	1	4634	0
285	1	1155	0	2025	0	2895	0	3765	0	4635	1
286	0	1156	1	2026	0	2896	1	3766	0	4636	1
287	1	1157	0	2027	1	2897	0	3767	0	4637	1
288	1	1158	1	2028	0	2898	0	3768	0	4638	0
289	1	1159	0	2029	0	2899	0	3769	1	4639	1
290	0	1160	0	2030	0	2900	1	3770	0	4640	0
291	0	1161	0	2031	0	2901	1	3771	1	4641	1
292	0	1162	1	2032	0	2902	0	3772	1	4642	0
293	1	1163	1	2033	1	2903	1	3773	0	4643	1
294	0	1164	0	2034	0	2904	0	3774	0	4644	0
295	1	1165	1	2035	0	2905	0	3775	1	4645	1
296	0	1166	0	2036	1	2906	0	3776	1	4646	1
297	0	1167	0	2037	1	2907	1	3777	0	4647	0
298	0	1168	0	2038	0	2908	0	3778	0	4648	0
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301	0	1171	1	2041	1	2911	0	3781	0	4651	1
302	0	1172	1	2042	0	2912	1	3782	1	4652	0
303	0	1173	1	2043	1	2913	0	3783	1	4653	0
304	0	1174	0	2044	0	2914	1	3784	1	4654	0
305	0	1175	1	2045	0	2915	1	3785	1	4655	1
306	0	1176	0	2046	0	2916	1	3786	0	4656	1
307	0	1177	1	2047	1	2917	0	3787	1	4657	1
308	0	1178	1	2048	0	2918	0	3788	1	4658	1
309	1	1179	1	2049	0	2919	0	3789	0	4659	1
310	1	1180	0	2050	0	2920	0	3790	0	4660	0
311	0	1181	1	2051	0	2921	0	3791	1	4661	1

312	1	1182	1	2052	1	2922	0	3792	0	4662	0
313	0	1183	1	2053	1	2923	1	3793	1	4663	1
314	0	1184	0	2054	0	2924	1	3794	1	4664	0
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316	0	1186	0	2056	0	2926	0	3796	0	4666	1
317	1	1187	1	2057	1	2927	1	3797	0	4667	1
318	0	1188	0	2058	1	2928	1	3798	1	4668	0
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320	1	1190	0	2060	0	2930	1	3800	1	4670	1
321	0	1191	1	2061	1	2931	1	3801	0	4671	1
322	1	1192	0	2062	0	2932	1	3802	0	4672	0
323	0	1193	0	2063	0	2933	0	3803	0	4673	1
324	0	1194	1	2064	1	2934	1	3804	1	4674	0
325	0	1195	0	2065	1	2935	0	3805	0	4675	0
326	0	1196	0	2066	1	2936	1	3806	1	4676	1
327	1	1197	1	2067	1	2937	1	3807	1	4677	0
328	1	1198	1	2068	1	2938	1	3808	1	4678	0
329	1	1199	0	2069	0	2939	0	3809	1	4679	0
330	1	1200	1	2070	0	2940	1	3810	1	4680	1
331	0	1201	1	2071	1	2941	1	3811	0	4681	0
332	1	1202	1	2072	1	2942	1	3812	0	4682	0
333	1	1203	0	2073	1	2943	1	3813	0	4683	0
334	0	1204	0	2074	0	2944	1	3814	1	4684	1
335	0	1205	1	2075	0	2945	1	3815	0	4685	0
336	1	1206	0	2076	0	2946	1	3816	0	4686	1
337	1	1207	0	2077	1	2947	1	3817	1	4687	1
338	1	1208	1	2078	1	2948	1	3818	1	4688	1
339	1	1209	1	2079	1	2949	1	3819	0	4689	1
340	1	1210	1	2080	1	2950	1	3820	0	4690	0
341	0	1211	0	2081	0	2951	1	3821	0	4691	0
342	1	1212	1	2082	1	2952	1	3822	1	4692	1
343	1	1213	1	2083	0	2953	0	3823	1	4693	1
344	0	1214	1	2084	1	2954	0	3824	1	4694	1
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346	1	1216	1	2086	1	2956	1	3826	0	4696	1
347	1	1217	0	2087	1	2957	1	3827	1	4697	0
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349	0	1219	0	2089	1	2959	1	3829	0	4699	1
350	1	1220	1	2090	1	2960	0	3830	0	4700	0
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352	1	1222	1	2092	1	2962	0	3832	0	4702	0
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356	1	1226	0	2096	0	2966	0	3836	1	4706	0
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359	1	1229	1	2099	0	2969	1	3839	1	4709	1
360	0	1230	1	2100	0	2970	1	3840	0	4710	0
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362	1	1232	0	2102	1	2972	1	3842	0	4712	0
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365	0	1235	0	2105	0	2975	0	3845	1	4715	1
366	1	1236	0	2106	1	2976	1	3846	0	4716	1
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368	1	1238	0	2108	0	2978	1	3848	1	4718	0
369	1	1239	0	2109	1	2979	0	3849	1	4719	0
370	1	1240	0	2110	0	2980	1	3850	0	4720	1
371	1	1241	1	2111	1	2981	0	3851	1	4721	1
372	0	1242	0	2112	1	2982	1	3852	1	4722	0
373	1	1243	1	2113	0	2983	1	3853	1	4723	1
374	0	1244	0	2114	1	2984	1	3854	0	4724	0
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377	1	1247	0	2117	1	2987	1	3857	0	4727	1
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380	1	1250	1	2120	0	2990	0	3860	0	4730	0
381	1	1251	1	2121	1	2991	0	3861	1	4731	0
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389	1	1259	1	2129	0	2999	0	3869	1	4739	1
390	0	1260	0	2130	1	3000	0	3870	1	4740	0
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393	1	1263	1	2133	1	3003	0	3873	0	4743	0
394	1	1264	1	2134	0	3004	0	3874	0	4744	0
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397	1	1267	1	2137	1	3007	1	3877	0	4747	1
398	0	1268	1	2138	1	3008	0	3878	0	4748	0
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403	0	1273	0	2143	0	3013	1	3883	0	4753	0
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405	1	1275	1	2145	1	3015	1	3885	1	4755	1
406	1	1276	0	2146	0	3016	0	3886	1	4756	0
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408	1	1278	0	2148	1	3018	1	3888	1	4758	1
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411	0	1281	0	2151	1	3021	0	3891	1	4761	0
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414	0	1284	1	2154	0	3024	0	3894	0	4764	1
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420	0	1290	1	2160	1	3030	0	3900	0	4770	0
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422	0	1292	0	2162	1	3032	1	3902	0	4772	0
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425	1	1295	1	2165	1	3035	0	3905	1	4775	0
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430	1	1300	1	2170	1	3040	1	3910	0	4780	1
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432	0	1302	0	2172	0	3042	0	3912	1	4782	1
433	0	1303	0	2173	0	3043	0	3913	1	4783	0
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435	0	1305	0	2175	1	3045	0	3915	0	4785	0
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437	1	1307	0	2177	0	3047	0	3917	1	4787	1
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441	0	1311	0	2181	0	3051	1	3921	0	4791	1
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447	1	1317	1	2187	1	3057	1	3927	1	4797	0
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449	0	1319	0	2189	1	3059	1	3929	0	4799	1
450	0	1320	0	2190	1	3060	1	3930	0	4800	1
451	1	1321	1	2191	0	3061	0	3931	1	4801	0
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453	1	1323	0	2193	1	3063	1	3933	0	4803	0
454	1	1324	0	2194	0	3064	1	3934	1	4804	1
455	1	1325	0	2195	0	3065	0	3935	1	4805	0
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457	1	1327	0	2197	1	3067	1	3937	1	4807	1
458	0	1328	1	2198	1	3068	0	3938	1	4808	0
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461	0	1331	0	2201	1	3071	0	3941	0	4811	1
462	0	1332	1	2202	0	3072	1	3942	0	4812	0
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465	0	1335	0	2205	1	3075	0	3945	1	4815	0
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467	1	1337	0	2207	1	3077	0	3947	1	4817	0
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469	0	1339	0	2209	0	3079	0	3949	1	4819	0
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471	1	1341	1	2211	0	3081	1	3951	0	4821	1
472	1	1342	1	2212	1	3082	1	3952	0	4822	0
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477	0	1347	0	2217	1	3087	0	3957	0	4827	1
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718	1	1588	1	2458	0	3328	1	4198	1	5068	1
719	1	1589	1	2459	0	3329	0	4199	0	5069	1
720	0	1590	0	2460	0	3330	0	4200	0	5070	1
721	0	1591	0	2461	1	3331	1	4201	1	5071	1
722	0	1592	0	2462	0	3332	0	4202	1	5072	1
723	0	1593	1	2463	1	3333	1	4203	0	5073	0
724	1	1594	0	2464	1	3334	1	4204	0	5074	0
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726	0	1596	0	2466	0	3336	1	4206	0	5076	0
727	1	1597	0	2467	1	3337	0	4207	1	5077	0
728	0	1598	0	2468	1	3338	0	4208	0	5078	0
729	0	1599	1	2469	0	3339	1	4209	1	5079	1
730	1	1600	0	2470	1	3340	1	4210	0	5080	1
731	0	1601	0	2471	1	3341	1	4211	0	5081	0
732	1	1602	0	2472	1	3342	1	4212	0	5082	0
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734	1	1604	0	2474	0	3344	1	4214	0	5084	1
735	0	1605	1	2475	1	3345	0	4215	0	5085	0
736	0	1606	1	2476	1	3346	0	4216	0	5086	1
737	1	1607	1	2477	0	3347	0	4217	0	5087	1
738	0	1608	0	2478	1	3348	0	4218	0	5088	1
739	0	1609	0	2479	0	3349	0	4219	0	5089	1
740	0	1610	1	2480	0	3350	1	4220	0	5090	1
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749	1	1619	0	2489	0	3359	1	4229	1	5099	0
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757	0	1627	1	2497	0	3367	1	4237	1	5107	0
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